# Parental participation, positioning and pedagogy: a sociological study of the IMPACT primary school mathematics project

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Thesis submitted for PhD examination
Institute of Education, University of London
March 1999

# Abstract

The central concern of the thesis is the exploration of the manner in which the practices of parental participation in primary school mathematics act to (re)produce existing social relations through the differential positioning of parents with respect to the official pedagogic practices of the school. The empirical focus for this research is the IMPACT project, an initiative designed to enable primary schools to integrate home-based tasks into their mathematics schemes of work and to develop dialogue between teachers and parents.

The empirical work consists of three closely related studies:

(i) An analysis of booklets and activities designed by teachers for parents. This explores the textual (re)production of social hierarchies and the distribution of the 'message' of school mathematics.

(ii) A study of the parent/teacher dialogue that takes place around primary school mathematics activities through the analysis of a large sample of IMPACT diaries from three schools. This explores the social class basis of differential self-positioning by parents with respect to the practices of the school.

(iii) An interview based investigation focusing on the access that teachers and parents have to the principles for the construction of school mathematics tasks, their realisation and the evaluation of their outcomes. This study also explores the criteria teachers use for the evaluation of parents and social class related differences in the modes of engagement of parents with IMPACT tasks.

The organisation of the thesis reflects the chronological order of the empirical work. The first four chapters of the thesis provide a discussion of substantive, methodological and theoretical issues based on a review of relevant literature and research. This involves a critical engagement with the manner in which recent work in the field has drawn of theories of cultural reproduction. The following seven chapters present the empirical studies. The contribution made by this work to knowledge in the field is summarised in the final chapter. Amongst the achievements of the research is the development of a language for the description of the social dynamics of parental participation in primary school mathematics and of relations between school and home more generally.

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# Acknowledgements

It is difficult to adequately express the extent of my gratitude to my supervisor, Professor Basil Bernstein. At every stage, he has given generously of his time and substantial expertise, and has unfailingly provided exemplary insight, advice and support. I have approached the process of doing a PhD as an opportunity to learn and gain experience as a researcher: such has it proved to be under Basil's guidance.

I have been well supported by friends and colleagues at the Institute of Education, University of London. In particular, my collaborative work with Paul Dowling has been a constant source of inspiration. Paul's own work has had a profound influence on my research, and his constant critical engagement, support and friendship is much appreciated. The staff and students of the Culture Communications and Societies group and of the former Department of Child Development and Primary Education have shown continued interest in my work and I have benefited greatly from the feedback they have provided. This is especially so in the case of the students of the MA in Primary Education. I have also had the benefit of many opportunities to present my work beyond the Institute. In this respect, I have particularly gained from the time I have spent at the University of Cape Town and the University of the Western Cape.

I am greatly indebted to Ruth Merttens and Jeff Vass, Directors of the IMPACT project for most of the period in which I have been conducting this research. Not only have they provided me with access to data from the IMPACT project and permission to draw on this in the conduct and presentation of my research, they have also given generously of their time and have engaged productively with my work, particularly in the early, formative stages. I have gained much from my dialogue with them.

I would like to thank the teachers and parents of the 'Midbury' schools, and those who took part in my pilot study. Everyone gave freely of their time; I hope I have been able to do justice to their contribution in this research.

There are many benefits to part-time study. It does, however, make heavy demands on friends and family. My thanks are due to everyone who has helped and supported me over the time it has taken me to complete this work. I could certainly not have achieved this without the continuous love and support of Diane Mayers and Michael Brown. Nothing I can say could adequately acknowledge the contribution they have made to this work.

# Chapter 1 Introduction

## 1.1 The research problem

The research reported in this thesis was designed to address the general question 'what are the processes by which the practices associated with parental involvement in primary school mathematics, as exemplified by the IMPACT project, act to educationally advantage some groups of parents and children whilst disadvantaging others?'. This question is framed within an over-riding sociological concern with the (re)production[1] of social relations, particularly class relations, in and through formal education. Clearly it is assumed, in stating the question, that schooling does indeed act to (re)produce social relations; it is also assumed that it does not do this in any straightforward and transparent way, hence the selection of an initiative widely lauded for its universally positive effects on children's attainment as the empirical focus of the study. As the research has developed, I have focused particularly on social class differences in the positioning of parents with respect to the school, pedagogic practice and access to the principles for the realisation and evaluation of school mathematics tasks.

In stating the question, reference is made to 'parental involvement'. It has, of course, been widely noted (see, for instance, Lareau, 1992; David et al, 1993; Reay, 1998) that it is overwhelmingly mothers who mediate between home and school and who take responsibility for the formal and informal education of their children. I have referred to 'parental involvement' here, however, because this is the term predominantly used in professional, research and development literature in the field and because the focus of my research is not exclusively on mothers.

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[1] Following Dowling, I am using this expression here, in presenting my own perspective, 'to signify the dialectical nature of production/reproduction' (Dowling, 1998a, p.20).

## 1.2 The study

### 1.2.1 Origins of the study

This research was motivated by my concern, as a sociologist and a primary mathematics educator, that developments in the teaching of primary mathematics in the late 1980s were acting to further advantage those pupils who were, by virtue of their social and economic background, already educationally advantaged. My initial focus was on the introduction of investigational approaches to the teaching of mathematics. Like many pedagogic innovations, the claim was that these new ways of teaching would be of benefit to all children, bringing about a universal increase in attainment in mathematics (see Cockcroft, 1982). In the discourse of this form of new school mathematics, as with earlier forms of 'new mathematics'[2], questions of the social distribution of mathematical attainment were pushed to the margins. There was acknowledgement of the manner in which previous approaches to school mathematics had disadvantaged girls and a substantial body of research on the processes by which this was achieved (see, for example, Burton, 1986; Walkerdine et al, 1989). Somewhat less attention had been paid to questions of 'race' and ethnicity and attainment in school mathematics[3]. Within mathematics education social class received virtually no attention, despite having been a key variable in the exploration of general educational disadvantage in the UK over the previous three decades (see discussion in Dowling, 1998a).

In the very early stages of my research I encountered the IMPACT project. IMPACT offered a process by which primary schools could foster the participation of parents in

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[2] For an analytic account of the introduction 'new mathematics' into primary schools in the 1960s and 70s, see Moon (1986).

[3] Where questions of 'race' and school mathematics have been raised there has been strong reaction. For example, Margaret Thatcher, then Prime Minister, explicitly attacked "anti-racist mathematics - whatever that means" (quoted in *The Guardian*, 3.11.87). Around the same time, the Mathematics Working Party of the National Curriculum Council asserted that parents from ethnic minority groups would not wish their children to do "multicultural mathematics" as it might be confusing (Department of Education and Science & Welsh Office, 1988).

the mathematical education of their children. What was particularly striking about the project was the combination of commitment to the potential of parental participation to challenge and transform the practices of the school and the belief that increased parental participation would be of benefit to all pupils. At the centre of the IMPACT process, at that time, was a collection of mathematical tasks (in the form of Resource Packs of sheets for photocopying) from which teachers could select tasks for parents and children to work on together at home. These tasks were intended to be an integral part of the teacher's scheme of work for mathematics. Each week or fortnight the teacher prepared a task with the children at school. The children took the task sheet home and worked collaboratively with their parents on the task. It was intended that the products of the joint activity of parent and child in the home would then feed back directly into the mathematical work being carried out in the classroom. Parents and children were also asked to make comments about the task; a response sheet or a diary was provided for this purpose. These comments were to act as the basis for a dialogue to be established between each parent and the teacher. As the project was engaging directly with the relationship between the local pedagogic practices of parents and the official pedagogic practices of the school, it appeared to provide the ideal context for my research. At this point, my empirical focus shifted from the introduction of investigational approaches to primary mathematics to parental participation in primary school mathematics and, specifically, the practices associated with the IMPACT project.

Over the period in which this research has been carried out both parental participation in education and attainment in primary school mathematics have been important themes in educational policy making and reform in the UK (see, for instance, the final report of the Numeracy Task Force (Department for Education and Employment, 1998)). Latterly, the relationship between social disadvantage and educational attainment has also become a prominent theme in policy making. Over this time, IMPACT has acquired a strong international reputation and has become the dominant parental involvement in

school mathematics initiative in the UK and practised widely elsewhere in the world (see Merttens, 1996).

### 1.2.2 THE EMPIRICAL PROGRAMME

The initial phase of my research focuses on teachers and the manner in which parents are constructed in teacher discourse (i.e. in what is said and written by teachers). I collected a wide range of documents produced by the project, by Local Education Authorities (LEAs) and by schools involved in IMPACT. The project directors allowed me access to raw data collected as part of their research programme (including interviews with teachers and videos of parents and children working together). I also attended the full range of IMPACT meetings covering all phases of the introduction and development of IMPACT in various parts of the country. At these meetings I made fieldnotes and, in some cases, conducted interviews and, where possible, made audio-tape recordings of discussions between teachers. I joined the project directors on visits to homes to video parents and children working together. I also visited schools and interviewed teachers who had been working on the IMPACT project. This work, carried out in 1990 and 1991, enabled me to sharpen my focus further and develop the approach I was to take in the subsequent collection and analysis of data.

This early work gave me insight into how the IMPACT project works in practice. It was particularly notable that in discussing parents, teachers who worked in schools with very different catchment characteristics were able to talk to each other about parents as if they were largely a homogenous group, with particular common pathological forms (e.g. the 'pushy' parent—see Cortazzi, 1991). Parents, it appeared, were seen as having clearly definable sets of common characteristics. In order to pursue the question of the manner in which 'the parent' is constructed, I collected booklets about IMPACT produced by schools for parents. The analysis of these booklets is presented in Chapter 5. The key questions here are who are parents presumed to be, what are their

characteristics and competences, what activities can they legitimately take part in, how are they positioned with respect to the teacher, the project and school mathematics?

From visits to homes and from looking at the comments made by parents in IMPACT diaries and on response sheets, it was apparent, however, that parents differed dramatically in the manner in which they carried out the IMPACT tasks with their children, in the kinds of information they relayed back to the school and the manner in which they positioned themselves in relation to the teacher. This contrast with the socially undifferentiated image of parents presented in the school booklets is the focus of the second phase of the empirical work. In 1993, complete class sets of IMPACT diaries were collected from schools with contrasting intake characteristics in terms of social class. The analysis of the diaries, presented in Chapter 6, focuses on differences in the form and content of the comments made by parents and relates these differences to social class. This phase of the empirical work demonstrates that there are distinct differences in the manner in which middle class and working class parents are oriented towards the IMPACT tasks, in the kinds of information they relay to the school and in the manner in which they position themselves with respect to the teacher/school.

The third phase of the empirical was designed to explore the manner in which parents interpret and operationalise the IMPACT tasks. I interviewed a total of eight teachers from four schools with contrasting intake characteristics to explore the nature of the criteria that they use to select tasks and evaluate the outcomes of the tasks. Through these interviews it was also possible to explore the knowledge that teachers have about parents and the manner in which teachers make judgements about parents. I carried out a total of 28 parent interviews. These interviews were designed to investigate the extent to which the descriptions of the process of doing IMPACT tasks given by parents from different social class backgrounds, and their analyses of the tasks, are consonant with the expectations of the teachers. I was also able to explore factors that affect the orientation of parents towards school work in general and their readings of

IMPACT tasks in particular. This phase of the empirical work is presented in Chapters 7, 8, 9, 10 and 11. The content of each of the chapters is described in more detail in Section 1.3 below. A more detailed account of the form of analysis adopted and the manner in which the studies address the central research questions and relate to each other is given in Chapter 4.

The three phases of the empirical work presented in this thesis mark out three directions from which to approach the central research question. The first phase examines the construction of parents in and through teacher discourse. Here the characteristics of a 'generalised' parent are sketched out and the potential for 'actual' parents to be understood and positioned by teachers in relation to this is produced. What parents can legitimately say, do and be is outlined. The second phase of the work examines what parents do 'say' to teachers in the context of IMPACT diaries. Here, within a specific context and using the resources available to them both within and outside the IMPACT process, parents are positioning themselves in relation to the school. Differences in the form and content of what they write are explored in relation to social class. The final phase of the work directly addresses the question of who has access to the principles which underlie the production of a legitimate performance within an IMPACT task (and access to the related evaluation criteria). This directly addresses the relationship between the local pedagogic practices of parents and the official pedagogic practices of the school and the different forms that this relationship takes for parents from different social class backgrounds.

### 1.2.3 THEORETICAL AND METHODOLOGICAL STARTING POINTS

Fundamental to this study is a particular understanding of pedagogy. For a pedagogic relation to be established there must be, at very least, a transmitter, an acquirer and something which is to be initiated, transmitted or transformed (say, knowledge, conduct or practice). Bernstein (1977, 1990, 1996; see also Solomon, forthcoming) makes a

distinction between three basic forms of pedagogic relation. In *explicit* and *implicit* pedagogic relations there is a purposeful pedagogic intention on the part of the transmitter. The transmitter must also be in a position to evaluate the acquisition, that is they must have access to criteria for the recognition of legitimate performance by the acquirer. The acquirer may or may not be complicit in the establishment or maintenance of the pedagogic relation. Both explicit and implicit pedagogic relations are 'progressive in time' (Bernstein in Solomon, forthcoming). If the intentions of the transmitter as to what is to be acquired (that is the sequencing and pacing of content and the criteria for evaluation of acquisition) are highly visible from the standpoint of the acquirer, then the pedagogic relation is *explicit.* If they are invisible from the standpoint of the acquirer, then the pedagogic relation is *implicit.* In contrast, in a *tacit* pedagogic relation, it is possible that neither the transmitter nor acquirer are aware of the transmission or transformation which occurs because tacit pedagogy is exemplified in modelling on the part of the acquirer. Meanings in the tacit pedagogic relation are thus, in Bernstein's words, 'non-linguistic, condensed and context dependent: a pure restricted code relay' (ibid.).

Clearly the establishment of the various forms of pedagogic relation is not confined to official sites specifically charged with the transmission, and thus reproduction, of knowledge, conduct and practice (i.e. institutions such as schools). The various forms of pedagogic relation are integral to both specialised practice and everyday life. The continuation of and/or transformation of these practices and their contexts (and thus social and cultural reproduction more generally) is clearly dependent upon the transmission/acquisition of knowledge/conduct/practice, whether this be explicit, implicit or tacit. A potential distinction can thus be made between the official pedagogic modalities of formal educational institutions, such as the school, and the local pedagogic modalities of informal contexts for social/cultural reproduction, such as the family.

The IMPACT project addresses a perceived divide between the official pedagogic practices of the school and the local pedagogic practices of the family. As an intervention project it attempts to affect change in pedagogic practice and establish new patterns of communication in a range of contexts (e.g. home and school) and between a range of agents (e.g. between parents and teachers, parents and children). The project is thus both pedagogic in intent and entails the initiation/transformation of a range of pedagogic relations. The rhetoric of the project is explicitly evangelical and emancipatory. My interest, however, is in the project as a context for the exploration of the relationship between official and local pedagogic modalities in the (re)production of social relations. Addressing the project and its realisations in practice in the terms outlined here raises a number of questions. What kind of relationship is established between the official pedagogic modalities of the school and the local pedagogic modalities of the home? To what extent and in what conditions are official and local pedagogic practices complimentary or in conflict? To what extent are particular groups of parents privileged and others marginalised and how is this achieved? How are parents positioned in and through the recontextualising of the pedagogic practices of the school? How do parents position themselves in relation to the school and its practices? How do parents occupy the pedagogic spaces opened up by the project and what variations are there within and between social class groups? What forms of pedagogic relations are established between teachers and parents and parents and children and how are these evaluated? What are the characteristics of the distribution of access to the criteria for the realisation and evaluation of school maths tasks and what are the consequences of these patterns of distribution?

The above sketches out an initial general theoretical orientation and begins the process of a development of a conceptual language. The language, at this point, is at a high level of generality and thus, whilst it begins to direct me towards particular empirical settings for systematic investigation, it does not enable me to describe the

empirical phenomena with which I am dealing. This is the product of the research—the development of a language of description which is produced, in a dialogic process, in the gap between initial theorisation and the language of enactment of, in this case, parents and teachers. This relationship is discussed in more detail in Chapter 4.

## 1.3 The structure of the thesis

Chapter 2 of the thesis begins with a general discussion of parental participation in schooling and the central place this has assumed in educational policy making and reform in recent years. The focus of the discussion is narrowed to the consideration parental involvement in school curriculum related activities within the home. Research and development in the area in which this work is most developed, literacy, is reviewed. The development of IMPACT, as with other forms of parental involvement in school mathematics, is closely related to this work on literacy. There are, however, a number of important differences between literacy and mathematics home-school interventions. An outline of the key characteristics of the IMPACT project is given and a critical review of research related to the IMPACT project is presented. This review highlights the distinctive nature of the kind of transformation that the IMPACT project is designed to bring about and the explanations of differences in the level and form of participation that are offered. This review highlights the marginalisation, within the project, of issues relating to social class relations and schooling. It also points to some of the consequences of this, notably the evident difficulty in relating the practices of the IMPACT project to questions raised by the continuing deficit/difference debate.

In the discussion of parental participation in schooling, reference is commonly made to the social characteristics of individuals and groups (such as social class, ethnicity and gender). Very little of the research carried out in this area could, however, be described as sociological. In Chapter 3, I consider a number of recent studies of parental

participation and of interaction between parents and teachers which directly address sociological questions and draw explicitly on sociological theory. The review deals with both the substantive results of the research (as they relate to the focus of the thesis) and the forms of sociological explanation offered. The chapter opens with a review of relevant research by Annette Lareau, Diane Reay, Carol Vincent, Stephen Ball and colleagues and Miriam David and colleagues. This is followed by a general consideration of the sociological conceptualisation of the relationship between home and school, with particular reference to the manner in which concepts drawn from the work of Pierre Bourdieu have recently been applied to the development of a sociological understanding parental participation and home-school relations.

The review of research in Chapter 3 provides a background for a brief consideration, in the first section of Chapter 4, of the relationship between social theory and empirical research in sociology in the light of contemporary criticism of educational research (for instance, Tooley, 1997). This discussion, in turn, lays the foundations for the elaboration of my own methodological approach. Following this, I provide an overview of the empirical work which is reported in the next seven chapters. The purpose of this short chapter is to make explicit the sets of assumptions which inform the design and conduct of the empirical studies described in subsequent chapters and to demonstrate how these studies relate to each other and to the main research questions.

The first of the empirical studies reported in this thesis in presented in Chapter 5. This chapter addresses the construction of the parent in and through the IMPACT project in practice. It presents an analysis of booklets about IMPACT and parental involvement in primary school mathematics produced by schools for parents. The first part of the chapter presents the design of the study, describes the sample and outlines the procedures adopted in the analysis of the booklets. The analysis of the booklets draws on the language of description for the sociological analysis of pedagogic texts developed by Paul Dowling in his analysis of a secondary school mathematics scheme

(see Dowling, 1995, 1996, 1998a). An outline of the key features of this language, as it relates to the analysis of IMPACT booklets, is given in Chapter 5. Following this, the analysis of the booklets is described. Firstly, the analysis of one booklet from the sample is given. A comparison is then made with other booklets from the same LEA. The analyses presented focus on the manner in which parents are positioned with respect to teachers and the school and the manner in which the message of school mathematics is distributed. The booklets establish a pedagogic relation between the school and the parent and act to appropriate the home as a space for the elaboration of school mathematics. I argue that in these booklets the expertise of the parent is localised and the principles for the production of school mathematics tasks, their realisation and their evaluation are presented as residing with the school. The analysis of booklets presented in this chapter enables us to explore what is being offered to parents by the school, how domestic activity is conceived of in relation to school mathematics and how the proposed dialogue between teacher and parent is framed by the school. This in turn raises questions about the nature of professional/lay relations within education. These are explored in the latter part of the chapter.

The analysis presented in Chapter 6 shifts the focus from the positioning of the parent by the school, to the manner in which parents position themselves in and through their interaction with teachers. A key component of the IMPACT process is the use of a diary which passes between teacher and parent with the mathematics activities sent home. Parents are asked to make a comment in the diary after each activity. Chapter 6 presents an analysis of comments made by parents from schools with different school intake characteristics. The analysis takes the form of the development of networks for the classification of comments made by parents in the diaries. The principles underlying this form of analysis are discussed in Chapter 4. The nature of the sample enables comparisons to be made between the form and content of the comments made by working class and by middle class parents. The diaries are presented by the IMPACT

directors as providing the means for a dialogue to develop between parents and teachers. This study focuses on what is relayed between home and school in the diary comments and how this is relayed.

The IMPACT project can be seen as identifying potential official pedagogic spaces within domestic settings and providing tasks for parents and children to realise school mathematics within these spaces. By analysing comments made by parents in the diaries, the study presented in Chapter 6 begins to look the ways in which parents occupy this space and to explore the relationship between this and social class. The study presented in Chapters 7, 8, 9, 10 + 11 takes this investigation further. This study is based on interviews with parents and teachers at four primary schools, selected in order to provide a contrast in terms of the social class of the parents interviewed. Chapter 7 presents the details of the sample, design and methods of data collection and analysis of the study. The aim of the study is to investigate the extent to which parents have access to the 'official' school criteria for the reading, realisation and evaluation of school mathematics tasks in the home and the manner in which the degree and form of access varies with social class. This extends the investigation of how parents operate in the pedagogic spaces marked out by the IMPACT project. An exploration of the relationship between local and official pedagogic practices, such as this, requires a comparison to be made between teachers' accounts (of the rationale behind the selection of IMPACT tasks, their own readings of tasks, their ideal realisation of tasks and the criteria for the evaluation of the tasks) with the accounts given by parents (of their own readings, analysis and realisation of tasks). It also requires the collection of data about the manner in which teachers make judgements about parents and the 'pedagogic biographies' and orientation to schooling of parents. Chapter 7 details the construction of the parent and teacher interviews and outlines how the resulting data were organised and analysed.

Chapter 8 presents the outcomes of the analysis of the teacher interviews. Exploration of the criteria employed by teachers in the selection of IMPACT tasks provides the background for an examination of the manner in which the professional position of the teacher is established and maintained. This is extended through exploration of teachers' accounts of their ideal form of realisation of the IMPACT tasks within the home. This enables a comparison to be made between teachers' expectations and parents' accounts of the realisation of the tasks. The teachers' analysis of a common task (also discussed with parents) is presented in terms of mathematical content and form of account. A comparison is made between the teachers' accounts and parents' accounts in Chapter 10.

The analysis of the parent interviews is presented in Chapters 9, 10 and 11. The focus of Chapter 9 is on the social class characteristics of the sample and the 'pedagogic biographies' of parents (that is both their experiences as learners and educational qualifications and their subsequent experience, as adults, of schooling and other sites of official pedagogic practice). The focus shifts to the conditions under which the IMPACT tasks are realised in Chapter 10. The latter part of this chapter moves beyond description of differences in the characteristics of the parents and their domestic contexts to a consideration of local pedagogic practices and parents' orientation to official pedagogic practice. The chapter draws out differences in 'pedagogic capital', orientation to schooling and pedagogic practices between middle class and working class parents; these gain in significance when viewed in the light of the expectations and evaluative criteria of teachers.

In Chapter 11, the network developed in the analysis of the diaries is adapted and applied to the analysis of parents' accounts of the realisation and evaluation of IMPACT tasks.

In the final chapter of the thesis the main points raised in the chapters are reviewed, summarised and related to the main research questions. The limitations of the study are considered and possible directions for future research are proposed.

# Chapter 2 Parental participation in primary schooling

## 2.1 Introduction

Over the past thirty years there has been an increasing interest in parental involvement in schooling. The Plowden Report (1967) urged primary school teachers to see parents as partners in the education of their children and to develop better communication with parents with a view to fostering a closer working relationship. It stated that:

> Teachers are linked to parents by the children for whom they are both responsible. The triangle should be completed and a more direct relationship established between teachers and parents. They should be partners in more than name; their responsibility become joint instead of several (p.30).

Subsequent reports and legislation in the UK have reinforced the view that parents are key agents in the education of their children and that home-school relations require the concerted action on the part of educators and policy makers. The Taylor Report (1975), for instance, extended the notion of partnership by suggesting that parents participate in the governance of schools. The Warnock Report (1978) stated that the full involvement of parents, as equal partners with teachers, is vital for the education of children with special educational needs to be effective. Similarly, the Elton Report (1989) identifies increased parental involvement in schooling as a strategy for addressing a perceived crisis in discipline in schools. The report urges schools to ensure that improved channels of communication are set up between school and home and that all parents have access to these.

Educational legislation in the 1980s has progressively refined the obligations of schools with respect to the involvement of parents and has formally extended the educational contexts within which parents can legitimately operate. As Jowett & Baginsky (1991) point out, in the introduction to their report on forms of parental

involvement in the 1980s (commissioned by the Department of Education and Science in 1986),

> the Education Acts of 1980, 1981, 1986 and, much more significantly, 1988 all refer to some of the many aspects of the relationship between home and school such as choice of school, access to information, involvement in assessment and representation on governing bodies (p.1)

These reforms have, however, effected a shift away from the notion of parents and teachers as equal partners towards a vision of the parent as client/consumer operating within the educational marketplace. The 1984 Green Paper (entitled 'Parental Influence at School: A New Framework for School Government in England and Wales') marked a distinct shift to a market conception of education, culminating in the publication of the Parents' Charter in 1991 (Department of Education and Science , 1991, revised in 1994).

In the 1992 White Paper 'Choice and Diversity', the conservative government confirmed the centrality of the notion of parents as informed consumers to their vision of the development of universal high quality education through competition between schools. The retrospective account given in the White Paper attempts to pull together a number of strands of conservative educational reform into a coherent programme. Open enrolment is seen as placing parents in the position of being able to make a choice between schools. In order to enable parents to make this choice, schools must supply information on the basis of which informed comparisons can be made. Parents, it is asserted, will be able to judge which schools provide a high quality education on the basis of this information and select a school accordingly. Under a system of local management of schools, in which funding is related to the number of children on the school roll, popular schools grow and thrive. Unpopular schools, presumed to be of low quality, will, it is argued, suffer dwindling student numbers until, ultimately, they have to improve their practice or are forced to close. In order that there is sufficient variety of forms of schooling for choice to be meaningful, schools have to be given a

high degree of financial and organisational autonomy. In this account, parents are conceived of as playing a central part in chaining together school accountability, choice, diversity, autonomy and quality.

The current labour government's strategies for educational development continue to emphasise relations between home and school and parental involvement in schooling. Attention has been paid, in particular, to the importance of homework and of the negotiation of contracts between parents and teachers (see Barber, 1996). In line with broader social policy, this represents a shift away from the extreme form of client/provider relationship projected as the ideal by the outgoing conservative administration, towards an emphasis on the responsibilities (as well as rights) of citizens in their dealings with public services. This is exemplified by the call for 'written home/school contracts for all pupils' (Labour Party, 1994, p. 11). These can range from legally binding contracts, with the implication that punitive action can be taken if either side fail to meet their responsibilities, through to 'signed understandings' (Macbeth, 1995) between individual parents and their child's school, in which the emphasis is on the establishment of mutual understanding of the respective responsibilities of parents and school. These developments have taken place within the context of increasing state concern with the stability of 'traditional' family structures and increasing regulation and surveillance of family relations, responsibilities and outcomes. In the Home Office (1998) consultation document *Supporting Families*, Home Secretary Jack Straw states that:

> Family life is the foundation on which our communities, our society and our country are built. Families are central to this Government's vision of a modern and decent country (ibid., p.2)

In outlining parental responsibilities with respect to schooling, two paragraphs are given to proposals for home-school contracts. An entire chapter (49 paragraphs) is dedicated to proposals for 'strengthening marriage'.

State interest in parental involvement in schooling is, of course, not unique to the UK. A number of commentators have explored the relationship between parental participation practice and the educational policy contexts in other countries. Beattie (1985) makes a comparison between parental involvement initiatives across four European countries, each with their own set of policy priorities. Macbeth et al (1984) and Macbeth & Ravn (1994) review practice across the member states of the European Community. More recently an Organisation for Economic Co-operation and Development survey has compared parental involvement in education in nine countries (Organisation for Economic Co-operation and Development / Centre for Educational Research and Innovation, 1997) and Ravn (1996) has looked more broadly at policy and practice across Europe. In the USA parental participation has been high on the political agenda since the compensatory education programmes of the 1960s, the most notable of which, Project Head Start (see Meisels and Shonkoff, 1990), incorporated a number of intervention strategies designed to foster closer links between home and school. Currently, increased parental involvement in education has come to be seen as a central component in the drive for more effective schools (see comprehensive review by Crispeels, 1996) and is a central feature of the federal Goals 2000: Educate America Act (see Lareau & Shumar, 1996). Similarly in Canada, parental participation has been central to the development of the community schools movement (see Levin, 1987) and the strengthening of the relationship between parent, child and teacher is currently seen as integral to school improvement (see Coleman et al, 1993). In Australia increased parental involvement has been a key feature of the federal government's Disadvantaged Schools Programme (see Toomey, 1993b) and is central to state level initiatives such as Talk to a Literacy Learner (see Cairney, 1996). An indication of the widespread international interest in parental involvement is indicated by a recent International Focus Issue of *Childhood Education* (edited by Sanders & Epstein, 1998) which contains reports on parental involvement initiatives in Chile, Spain, Cyprus, Portugal,

Luxembourg, Germany and Denmark as well as in the UK, Canada, USA and Australia.

This sustained state interest in home-school relations and parental participation in schooling has provided a supportive context for the development of numerous parental involvement initiatives. These range from local initiatives focusing on particular activities with a specific group of parents through to national projects with broad objectives. The form that parental participation might take varies from assuming formal and legal responsibility for the governance of a school as a parent governor to increased involvement in helping one's own children with school activities within the home. From her survey of home-school initiatives in the UK in the 1980's, Tomlinson (1991) has identified four categories of interaction between parents and teachers.

(i) Contact via shared communication: visits (parents to schools, teachers to homes), letter, circulars, pupil reports, pupils records of achievement and compacts, Government reports, school prospectuses.

(ii) Parental involvement: (a) in learning, via home-school reading and maths schemes, homework agreements, etc. (b) in day-to-day activities as classroom helpers, technicians, translators, materials makers, assistants on outings, etc.

(iii) Parental informal involvement in school matters via Parents Teachers Associations and other parent organisations. Parental fund-raising.

(iv) Parental formal (and legal) involvement in school decision-making as parent governors, and the annual parents' meeting. (ibid., p.5)

A similar set of categories, developed from a survey of parental involvement research and development work in the USA, is offered by Epstein (1990). The initiative which constitutes the empirical focus of this thesis, the IMPACT project, clearly falls into the second of Tomlinson's categories[1]

The high degree of interest in parental involvement, together with a diversity of forms of practice, has motivated numerous empirical studies and generated an extensive literature. This includes divers descriptive accounts of parental involvement initiatives.

In the UK these range from Jowett & Baginsky's (1988, 1991) national survey of forms of parental involvement through Bastiani & Wolfendale's (1996) collection of reports on a range of specific initiatives to Edwards & Redfern's (1988) account of parental involvement in one urban primary school. Parental involvement in schooling is also treated as a key variable in broader studies of schooling, such as the study of urban infant schools by Tizard et al (1988). For the purposes of providing background to the research presented in this thesis, the review of previous relevant research and development work will focus specifically on (i) parental involvement as defined by Tomlinson's second category; (ii) parents and primary school mathematics, with particular reference to the IMPACT project; (iii) sociological studies of relations between parents/home and teachers/school.

## 2.2 Parental involvement in literacy education

It is in the area of literacy development that practitioners and researchers have been most prolific. Hannon (1995) provides a critical overview of the development of parental involvement in literacy teaching and learning. He sees the minimum programme for parental involvement in primary schooling suggested by the Plowden Report (1967) as providing the initial spur for a slow but steady increase in the 'limited involvement' of parents in the teaching of reading in the 1970s. Increased interest in parental involvement was generated by the publication of a study by Hewison & Tizard (1980) which claimed that, in working class families, whether or not a child's parent heard them read regularly in their early years of schooling was a key factor in reading performance at the age of seven. This led to a two year intervention project in the London Borough of Haringey, in which researchers made home visits to a sample of

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[1] The IMPACT process also includes elements of the first category, such as the production of booklets and materials for parents and the establishment of a formal means of communication between parents

parents to help and encourage them to read regularly to their children. Tizard et al (1982) were able to demonstrate that after two years, the children whose parents had taken part in this initiative had higher scores in reading tests than a comparable non-intervention group. A similar intervention study, with less encouraging results, was conducted by Hannon & Jackson (1987) in Belfield Community School in Rochdale.

These studies, together with non-research oriented initiatives such as PACT (Parents and Teachers and Children Together—see discussion below) attracted, according to Hannon, a great deal of public attention and provided motivation for the development of what he calls 'open' approaches to parental involvement in reading. These approaches focus largely on children in the early years of schooling and provide general advice and encouragement to parents. They encourage a relatively unstructured approach to hearing a child read and do not promote the use of specific techniques. Hannon notes that, although open approaches predominated, and continue to predominate today, the 1980s saw the growth in more structured or 'prescriptive' approaches. These approaches, which are well documented in a collection of papers edited by Topping & Wolfendale (1985) with subsequent developments described in Wolfendale & Topping (1996), attempt to train parents in the use of particular techniques and, in many cases, are seen as being particularly appropriate for older, failing readers. The most common of these approaches is 'paired reading'. This consists of a tightly controlled set of procedures, including, for example, specific instructions on how to deal with errors made by the 'tutee' (see Topping, 1995, for a full description of this method). Tutors and tutees are trained in the use of the technique together. The training includes both information about the techniques and demonstrations of how to do it. As Topping (1996b) asserts 'Paired Reading is *not* any old thing that two people do with a book' (p.46, emphasis in original). Topping and colleagues have developed similar, highly structured approaches to spelling and writing (see Topping 1995).

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and teachers.

Research into the efficacy of the these two approaches to parental involvement, in terms of increased performance in reading, is inconclusive. With respect to 'open' approaches, Toomey (1993a) points to four studies which fail to replicate the positive effects shown by the Tizard et al (1982) study of the Haringey Project. In response to this, Hannon (1995) points out that there are at least eight other studies that do show a positive effect. The equivocal nature of the available evidence is reinforced by Macleod (1996) who, by reanalysing data from the Haringey study, challenges the three main conclusions drawn by Tizard and colleagues. She also challenges the conclusions drawn by Hannon (1987) and Tizard et al (1988), two studies which claim to demonstrate that parental involvement in reading has no significant effect on reading performance. Research into 'prescriptive' approaches, according to Hannon (1995) and Topping & Lindsay (1992), consistently demonstrates a positive effect. As all the research relates to the short term effects of short duration programmes on reading test scores, often with tutees who are underachieving in reading, questions have been raised about the potential of these approaches to effect longer term improvements with more representative samples (Hannon, 1995).

In both cases there a questions to be raised. As Macleod (1996) observes, there is clearly an enduring belief in the efficacy of parental involvement as a strategy in the improvement of literacy levels despite the paucity of 'hard evidence' (p.173). What then is it that gives parental involvement its apparent power to garner such enduring popular support? Wolfendale (1996), for example, argues for the empowering nature of parental involvement on the basis that there is copious evidence to support such an assertion. None, however, is presented in her paper.

With respect to claims that parental involvement is an effective strategy for addressing differences in literacy attainment between working class and middle class children, Toomey (1993b) points out that, outside closely monitored research oriented interventions, there will be parents who are difficult to contact or who do not readily do

what is asked of them. On the basis of his own work on difficult to reach parents, he argues that these non-participating parents are more likely to be from low socio-economic status backgrounds and thus, if positive effects are to be had from increased parental involvement, this group is likely to be further disadvantaged. Hannon (1995) also raises questions about the efficacy of parental involvement as a strategy for addressing differences in attainment between working class and middle class children. On the basis of his review of research, he argues that whilst variations in literacy attainment between social classes is discussed 'in terms of *years* of development ... at best, the approaches reviewed here produce gains of the order of *months*' (p.144, emphasis in original).

Two other related features of the work discussed above are worth noting. Firstly, the tight focus on reading, the use of reading tests and the use of reading ages as indicators of levels of literacy belies a very narrow definition of literacy which is in tension with contemporary perspectives (see Baynham, 1995; Lankshear, 1997; Street, 1993). Secondly, little attention is given to the existing 'literacy practices' of parents and children or to the manner in which they interpret and put into practice the advice they are given. Recent interest in 'family literacy' begins to address these questions. In doing so it also engages practitioners and researchers with long-standing debates about the nature of differences in cultural practices and educational attainment.

Topping (1996a) sees family literacy as having the following characteristics. It brings together adults and children with the aim of increasing literacy competence, self-image and motivation of all participants. It values and builds on existing home culture and competencies and aims to offer access to all members of all kinds of families and to enable all family members to help each other. Literacy competence is understood in terms of the 'needs, uses, objectives and values of all participants, not just those of the school system' (p.149). Wolfendale (1996) recognises the tensions inherent in this kind of approach. Within the literature on family literacy she identifies two

> predominating rationales, one which emphasises the 'deficit' or 'needs' model, and the other, a 'wealth' model which attempts to avoid such labelling by adopting an alternative value position (p.169)

With regard to literacy intervention projects, she sees the deficit position as having its roots in the Head Start project (see Meisels and Shonkoff, 1990) in which specifically targeted experimental interventions were designed to address the perceived deficiencies of low socio-economic class households. Wolfendale, who views these kinds of initiatives in terms of the empowerment of disadvantaged families, identifies the family literacy initiatives of the Adult Learning and Basic Skills Unit (ALBSU), funded by the UK government, with the deficit position (see ALBSU, 1994). She argues that initiatives of this kind have attempted to overcome perceived educational disadvantage through educational interventions whilst maintaining a position which viewed the child 'as part of a viable, vibrant, dynamic family unit that was socially valid (even if socially deprived) and which acknowledged the 'equivalent expertise' of parents as educators.' (Wolfendale, 1996, pp.169-70). The 'wealth' model views children as:

> the inheritors and inhabitants of a family domain with its own rich, cultural, linguistic and domestic traditions. Family literacy endeavours in this context to effect a rapprochement between the different mileux in which the children exist, notably, home, school, community. (ibid., p.170)

The deficit/wealth distinction is analogous with the deficit/difference opposition of earlier debates in the sociology of education (see discussion below; see also Valencia, 1997, for an overview of this debate and its relationship to contemporary social policy). It is a consequence of the attempt to construct interventions which aim to transform educational and/or life chances of groups perceived as oppressed or disadvantaged through the transformation of their practices. These tensions are dealt with pragmatically by the advocates of the literacy programmes discussed above. As the initiatives are designed to enhance the educational attainment of groups seen as socially disadvantaged or individuals judged as underachieving, social class is frequently

invoked but not incorporated into a framework that would enable us to describe the relationship between social class and attainment in school in sociological terms. The relationship between parental involvement intervention projects and the sociology of education is discussed below.

## 2.3 Parental involvement in school mathematics: the IMPACT Project

The growth of interest in, and apparent success of, parental involvement projects in the area of literacy generated a demand for similar initiatives in other areas of the curriculum. Graham & Roberts (1983) and Simmons & Perry (1987) give accounts of early approaches to parental involvement in primary school mathematics in the UK. By 1998, parental involvement in primary school mathematics had become a central tenet of the National Numeracy Strategy (see Department for Education and Employment, 1998; National Numeracy Project, 1998). Building on earlier literacy work, Croft & Topping (1992) have developed procedures and materials for shared science activities. In the USA, the Family Math approach, in which mathematics workshops are run specifically for parents and other family members, developed from the EQUALS project (based at the University of California at Berkeley) in 1981 (see Stenmark, Thompson & Cossey, 1986) and is now widespread in North America (see, for instance, Saarimaki, 1993, for an account of Family Math in Canada; see also Department for Education and Employment, 1998, for a brief account of the Family Numeracy pilot programme run in the UK by the Basic Skills Agency). Mathematics and science activities were included in the materials produced by the TIPS (Teachers Involve Parents in Schoolwork) project, initiated by members of the Educational Research Center at Johns Hopkins University in Baltimore (see Epstein, 1990; 1996). Similar projects are operational in other countries.

Although not the first initiative to attempt to involve parents in school mathematics in the UK, IMPACT is now by far the most widespread. The IMPACT project was set up by Ruth Merttens in 1985. It was, and remains, based at the Polytechnic of North London (now the University of North London). The first phase of the project was, according to Merttens and Vass (1990), motivated in large part by the call for schools in the Inner London Education Authority to foster greater parental participation in the education of their children made by the Thomas Report (Thomas, 1985). In particular, Thomas recommended that schools adopt the active and collaborative style of parental involvement that was characteristic of the PACT approach to reading (see discussion below). As a response to Thomas' question of how such an approach might be adapted to other areas of the curriculum, Merttens set up a pilot project, focusing on parental participation in mathematics education, in six inner London primary schools[2]. IMPACT has now been taken up in over 5000 schools in England, Scotland and Wales (Merttens, 1996). IMPACT is also being used in schools in other European countries, in South Africa, Canada and the United States. Many of the principles and practices of the IMPACT project have recently been taken on board by the Numeracy Task Force in England and Wales (see Department for Education and Employment, 1998).

A number of fundamental commitments were made in the early stages of the project. In their first published paper on the IMPACT project (written after the project had been running for one year) Merttens and Vass (1987a) present IMPACT as an 'interventionist and materials based' project which 'seeks to involve parents of primary school children in a structured way with their children's learning of mathematics' (ibid., p.23). They state that the form taken by this intervention closely parallels the PACT (Parents And

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[2] There is some inconsistency in the various accounts of the genesis of IMPACT. Early accounts (e.g. Merttens, 1987; Merttens & Vass, 1990) state that it started in six schools in 1985. More recent accounts (e.g. Morgan & Merttens, 1995; Merttens, 1996) state that it started in 12 schools in 1985. Merttens (1995b) states that IMPACT was developed in eight schools in 1985.

Children and Teachers) home-school reading initiative (Hancock & Gale, 1996, provide a description of the realisation of PACT in the London Borough of Hackney).

PACT is based on the approach to home reading first explored by Hewison & Tizard (1980) in the London Borough of Haringey. Parents are asked to read with their children, that is to read to their children and listen to their children read. The child is given a reading book to take home by their teacher. In some cases advice is given on strategies that parents might use (either in written form or through a meeting held at the school). After each reading session the parent is encouraged to make a brief written comment on a sheet that is sent home with the book. Likewise, each time the teacher listens to the child read, they should also add a written comment to the sheet. In this way a dialogue between teacher and parent is supposed to develop around the child's performance and progress in reading. Although, as we have seen, there is a good deal of contradictory evidence from research into these kinds of 'open' approaches to parental involvement in literacy, this kind of intervention is widely taken to be of value to all children in boosting their attainment in reading. It is acknowledged that there is wide variability in the extent to which parents already read with their children and that, by incorporating joint book-reading at home into the school curriculum and providing books and other support for this activity, initiatives such as PACT are potentially of greater benefit to those children whose parents do not conform to educationally sanctioned patterns of practice. In homes where little or no time is spent in joint book-reading activities, PACT creates a new pedagogic space. Little attention has been paid, however, to variations in the manner in which parents read with their children and engage in joint book-reading activities (see Williams, 1996).

Like PACT, the IMPACT initiative requires parents to work together with their children on school-like tasks. The lack of a common mathematics education practice which is analogous to reading with a child (that is, a pedagogic practice that is prevalent in both home and school contexts and considered to be mutually recognisable as such

by both parents and teachers) led the project directors to produce banks of tasks that could be incorporated into each teacher's schemes of work and which could provide the basis for tasks to be carried out at home. This divergence from PACT was seen as having it's roots in the nature of school mathematics. Merttens & Vass (1987a) claim that there are 'problems and considerations which have to be taken into account which are quite specifically to do with mathematics' (ibid., p.24). They argue that both teachers and parents may have 'bad memories of mathematics at school' (ibid.). As a consequence teachers, through lack of confidence in their own mathematics, might tend to rely heavily on mathematics schemes in their teaching and be reluctant to involve parents in an area of the curriculum in which they feel insecure. Parents, on the other hand, who see mathematics as an important subject but lack confidence in their own mathematics, might tend to look for tasks that resemble those they are familiar with from their own schooling. Merttens and Vass thus mark out mathematics as a special case because they consider that the perceived lack of confidence of both parents and teachers and the consequent 'mathematics anxiety' experienced (see Buxton 1981; 1991) might lead both parties to adopt conservative positions. Teachers, they argue, might feel suspicious of and threatened by parental scrutiny of their teaching of mathematics and parents might feel suspicious of and threatened by new and unfamiliar approaches to teaching mathematics.

### 2.3.1 The IMPACT process

Whilst the precise implementation of IMPACT varies from school to school, there are certain key features of the manner in which IMPACT works. Merttens and Vass (1990) give a number of 'essential' features which might typically be realised as follows[3]. A school, usually within the context of a local authority initiative, will decide to become

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[3] This is based on a typical pattern noted from my own interviews and field notes. A more complete account is given in Merttens & Vass, 1990. Some practitioner perspectives on the IMPACT process are

involved in IMPACT. Teachers will attend a number of meetings in which they will be introduced to the way in which IMPACT works, and in which they might work collaboratively to produce things such as response sheets for parents and children (see Figure 2.1 and Figure 6.1).

IMPACT IMPACT IMPACT IMPACT IMPACT IMPACT IMPACT IMPACT IMPACT IMPACT

CHILD'S NAME _____ DATE _____

This activity took ☐ minutes, approximately.

Who did the activity with the child ? ☐

This week's activity:

| W it very well | Went quite well | Went OK | Went badly |
|---|---|---|---|
| ☐ | ☐ | ☐ | ☐ |

It was:

| Much too hard | A bit too easy | Just right | Too easy |
|---|---|---|---|
| ☐ | ☐ | ☐ | ☐ |

Doing this activity, I gave my child:

| A lot of help | A little help | No help |
|---|---|---|
| ☐ | ☐ | ☐ |

I think my child:

| Learned a lot | Learned a little | Learned nothing | Became confused |
|---|---|---|---|
| ☐ | ☐ | ☐ | ☐ |

On this topic, I think my child:

| Needs a lot more practice or help | Needs a little more practice or help | Had done enough |
|---|---|---|
| ☐ | ☐ | ☐ |

Please comment on whether your child seemed to understand the activity, what to do, etc.

Did anything unexpected, exciting, interesting or unusual happen ?
Please tell us about it.

Name: date:

I liked this activity

| not much | OK | very much |
|---|---|---|
| ○ | ○ | ○ |

This week's activity was

| Too hard | Just right | Too easy |
|---|---|---|
| ○ | ○ | ○ |

During this week's activity I

| Learned a lot | Learned a little | Learned nothing |
|---|---|---|
| ○ | ○ | ○ |

If you want, write about what you did.....

IMPACT IMPACT IMPACT IMPACT IMPACT IMPACT IMPACT IMPACT IMPACT IMPACT

*Figure 2.1: Example of an IMPACT response sheet*

Each school will hold a number of meetings for parents to inform them about the project. The school might also produce a booklet for parents about IMPACT (see Figures 5.1 to 5.8 for an example). The teachers will plan the mathematical work that they intend to do during a particular period of time (over half a term, for instance). This planning will incorporate a number of tasks to be carried out at home (perhaps one per week or one per fortnight). These may be selected from a large bank of tasks produced

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given in Merttens & Vass, 1993.

by IMPACT and distributed to participating schools[4] (see Figures 2.2 and 2.3 for an examples) or they might be of the teacher's own design.

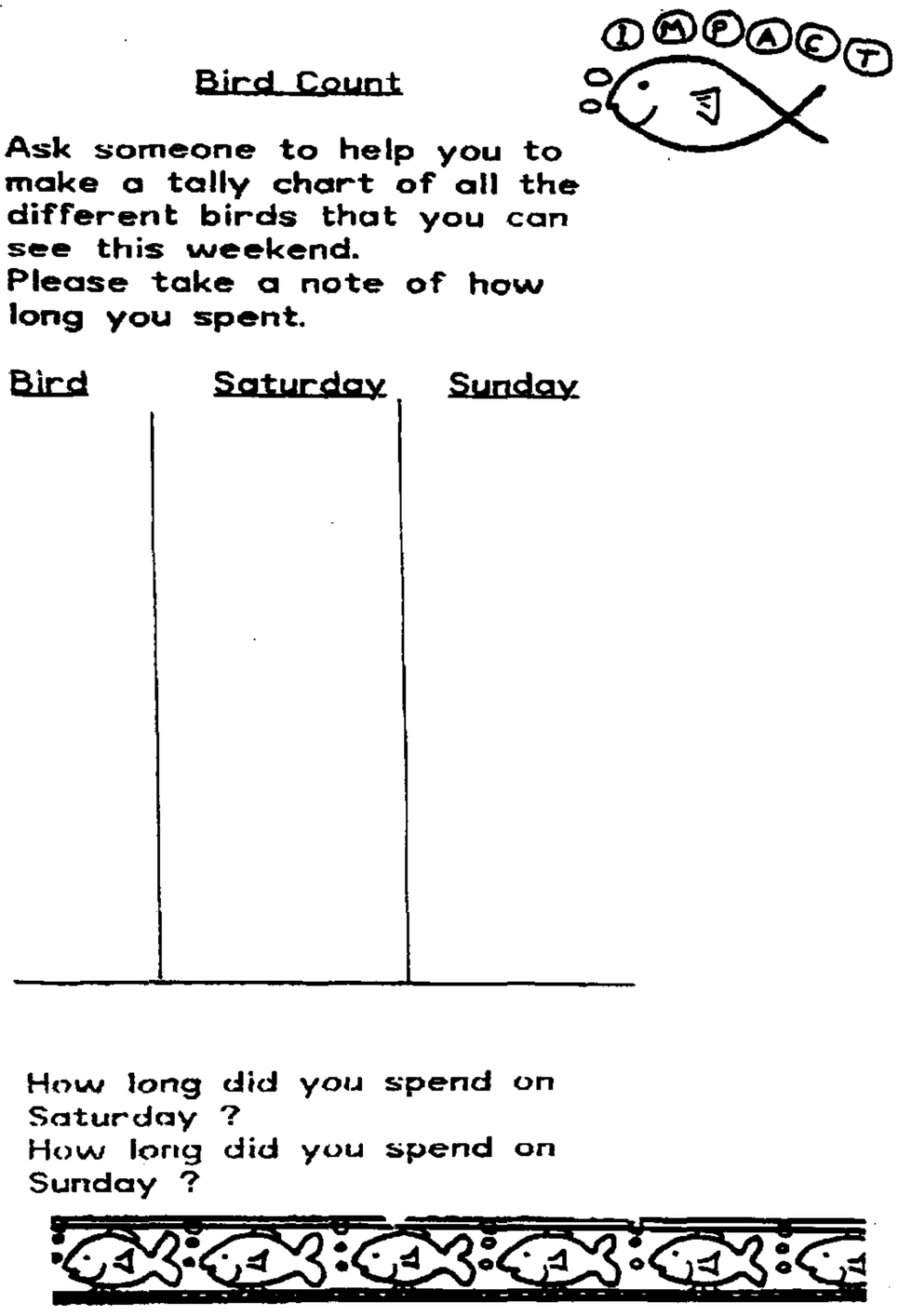


*Figure 2.2: A KS1 IMPACT task*

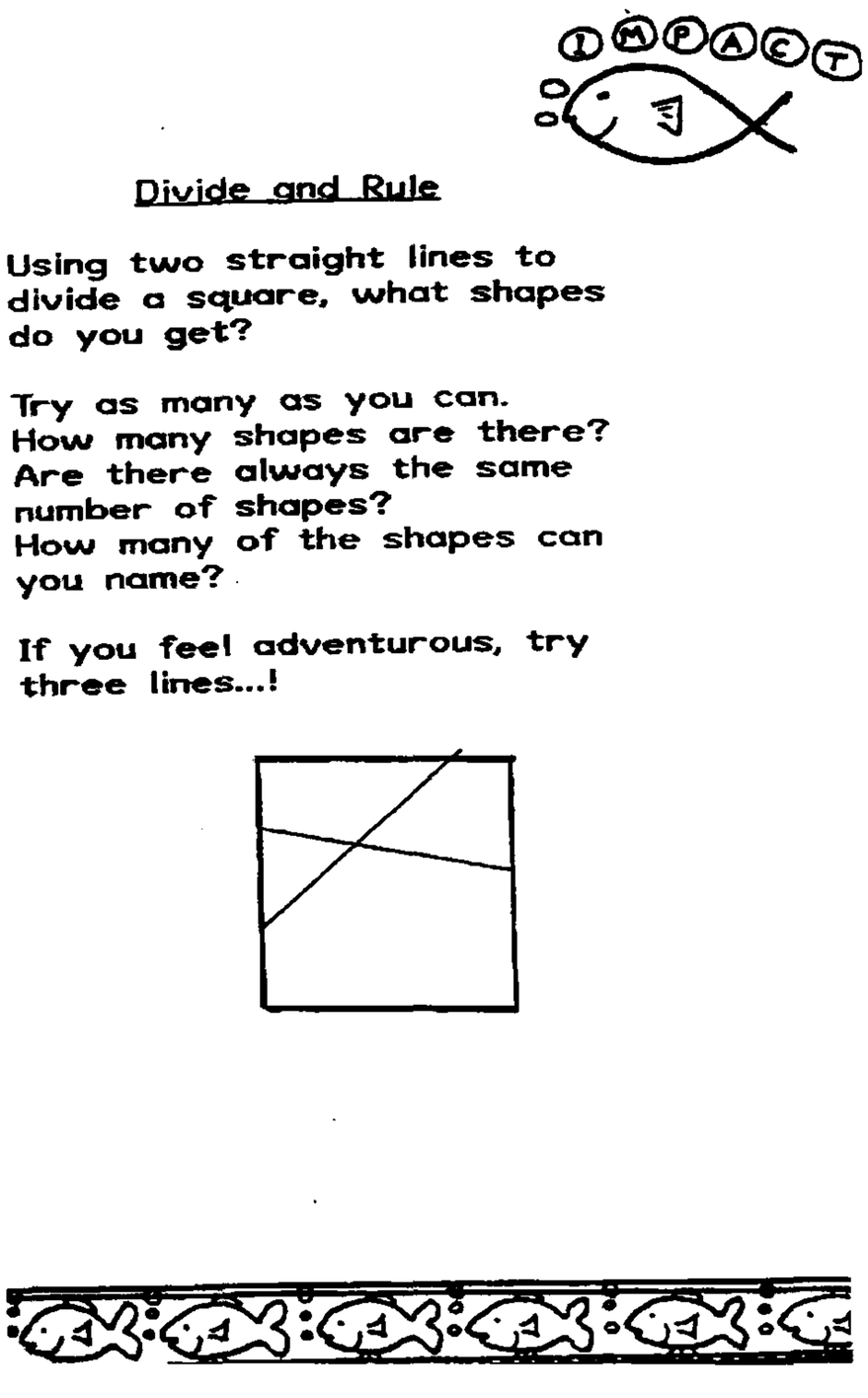


*Figure 2.3: A KS2 IMPACT task*

For each home task the children will take part in preparatory work within the school before taking home a sheet describing the task, which is to be done with their parents. Having performed the task with their parents, the products (if there are any) and a response to the task by the child and by the parent (often on a response form of the type

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[4] In the initial stages of the project the activity sheets were produced and distributed to schools in packs by the project office. Some topic related books of photocopyable activity sheets, based on sheets from the packs, were published by Blackwell. Scholastic Press now publishes a series of age phase related books of IMPACT activities. Many of the original activities were rewritten for these books and a number of new activities added. In addition, the graphical style of the sheets was changed dramatically and professional production values adopted. The Scholastic books are currently the prime form of distribution of IMPACT tasks. That these are available through a commercial publisher and thus from bookshops makes it possible for schools to adopt IMPACT without necessarily having contact with the project itself.

shown in Figure 2.1 or Figure 6.1) are returned to the school. There will then be some follow-up work within the school that builds in some way on the home activity. The school may hold subsequent meetings with parents to discuss and review how things are progressing. There is likely to be INSET for teachers associated with the project and some LEAs also have advisory teachers to help schools involved in IMPACT. There may also be regular meetings of networks of teachers involved in IMPACT and other forms of local support.

### 2.3.2 THE IMPACT RATIONALE

The nature of the intervention associates IMPACT very clearly with the school. It marks out the home and the school as distinct spaces and attempts to put into place mechanisms which enable a dialogue to be set up between parents and teachers. Central to this is the projection of school mathematics tasks into the home and the engagement of parents in joint activity with their children. IMPACT is presented by Merttens & Vass as having the potential for transforming relations between parents and teachers, and practices both within the home and within the school. The processes associated with IMPACT are presented as bringing together two groups, each with their own areas of expertise. Teachers, as a professional group with public responsibility for the learning of the children in their charge, have general professional skills and knowledge and specialised educational resources which, in the light of their professional experience, are applied to the development of teaching and assessment strategies. Parents operate in a private domain, have detailed experience of and knowledge of their own children and have exhibited localised expertise in the induction of their children into everyday practices and the development of basic competences. The rationale for the IMPACT project is based on the assertion that neither group has adequate knowledge of the practices of the other and that to supplement the generalised knowledge and skills of the teacher with the local knowledge and skills of the parent will be of benefit to the child.

The establishment of such a partnership will, Merttens & Vass argue, have a number of effects beyond fostering the attainment of the children. At a very local level, for instance, feedback from the parents about the tasks will influence the teacher's planning. They state that 'on the basis of this feedback the teacher modifies the subsequent classwork accordingly' (Merttens & Vass, 1987a, p.23). Correspondingly, engagement in school mathematics tasks will demonstrate to parents the value of new approaches to teaching and learning mathematics which in turn will reduce pressure for more traditional forms of mathematics. In a paper written two years into the project, they state that 'parents stop criticising and become involved in the process' (Merttens & Vass, 1987b, p.268). The enjoyment of tasks by parents is seen as helping to break the chain of negative orientations to school mathematics that, it is argued, is maintained by the inter-generational transmission of particular attitudes to mathematics. Children are seen as mediating in this transformation of parental attitudes to school mathematics. Merttens and Vass state that:

> the mathematics at home is embedded in a 'real-life' situation. This means it is impossible for the child to build up an image of mathematics as merely a 'school' subject. Also, parents become aware of the danger of teaching the children skills, such as particular algorithms, which are not transferable. (Merttens & Vass, 1987a, p.25)

This transformation in what counts as mathematics affects teachers as well as parents and children. The interchange between home and school will, it is claimed, enable all involved to see the mathematical potential of everyday activities outside the school. This is seen as a necessary transformation as 'a large number of teachers and the vast majority of parents would not see themselves as doing any significant mathematics at home, at least not in the early years.' (Merttens & Vass, 1987b, p.267).

The anticipated transformations can also be more general and far-reaching in nature. Doing IMPACT could, it is claimed, 'lead to a re-appraisal of the role of parents in school' (Merttens & Vass, 1987a, p.23). More specifically, it is claimed that this form of parental involvement in mathematics teaching will present teachers with a number of

fundamental challenges. Firstly, they claim that as parents will not view their children's activities in terms of school curriculum subjects; 'subject boundaries become blurred' (Merttens & Vass, 1987b, p.269). Secondly, they state that, because parents will not interpret their children's performances in terms of the school's within-subject hierarchies of skills and knowledge, teachers will be forced to rethink 'the whole relationship between being able to do something and understanding that thing' (ibid.). This signals an anticipated tension between what Bernstein (1996) has identified as performance models (in this case held by parents) and competence models (in this case held by teachers). Thirdly, they anticipate that having to take on board the views of parents 'has the effect of blurring the boundaries between the role of the teacher and that of the parent' (Merttens & Vass, 1987b, p.270).

This emphasis on the transformatory and emancipatory potential of IMPACT continues in the later writing of the project directors. Vass (1993a), for instance, extends the scope of possible transformation beyond the specific details of home/school practice to the manner in which relations between individuals and institutions are understood more generally.

> As it is, while providing opportunities for more powerful discourses to structure the activities of participants, in my experience it does offer opportunities for participants to begin to frame questions about the nature of the institutions within which we live. (ibid., p.229)

Merttens has also, in her more recent work, continued to present the IMPACT project as transformatory in intent, although in somewhat less abstract terms.

> We are attempting to instigate change: changes in the ways in which teachers and parents interact, changes in the relationship parents have with the school, changes in the classroom practice to take account of the shared activities at home. (Merttens, 1993b, p.10)

Merttens has also made direct reference to the development, though parental involvement, of 'empowering' forms of pedagogy (see, for instance, Merttens, 1993b, and Merttens, 1995a, where parallels are drawn between IMPACT and the work of

Paulo Freire). She has continued to stress the potential of parental involvement to threaten and ultimately transform the established practices of teachers. She states that 'the entire raison d'être for professionals, experts, specialists in education is fundamentally threatened by genuine collaboration with parents' (p.29). With reference to parental participation initiatives such PACT and IMPACT, Morgan & Merttens (1995) claim that:

> despite the increase in schemes of this sort, despite political pressure and despite teachers' claims, parental involvement in educational change is still seen as a threat by schools and is not established or welcomed. (ibid., p. 27)

In the most recent work there is a clear move to distance the project from deficit views of parenting (see more detailed discussion in Section 2.4 below). For instance, Merttens (1996) states that IMPACT is primarily concerned with 'a more even distribution of learning resources in the home' (p.412). The positive outcomes of IMPACT for schools are seen as, firstly, 'once children are reinforcing their school work in the context of the home, the learning period is extended and children are actively involved in the further explication of what they have learnt in school' (ibid.) and, secondly, 'the teachers in the school benefit from the work they do integrating the IMPACT materials into their schemes of work' (ibid.) which in turn improves the overall quality of the teaching of mathematics in the school.

Merttens goes to great lengths to stress that no attempt is being made to 'improve' the practices of parents: 'it is not that we wish to 'empower' certain 'unskilled' parents so that they possess the skills to become *as good as* the 'skilled' parents' (ibid., p.416, emphasis in original). Rather, parental participation projects such as IMPACT

> can be a means whereby parents *can* do what they *want* to do or *are doing* in any case, such as reading with their children or sharing mathematics activities. This then, is not so much based upon the notion that some types of parenting practices are less good than others, but rather upon the premise that not all parents have equal access to resources such as books or mathematics activities which they may wish to use. It then becomes the school's job to ensure, in this instance at least, equality of opportunity. (ibid., emphasis in original)

There are, however, other sets of assumed inequalities. In order to promote equality Merttens states that, in contrast to conventional homework 'parents are required to support their child's learning not to act as substitute teachers' (ibid., p.413). The reason given for this is that the creation of situations in which the child needs assistance and which prompt the parent to act in a teacherly manner

> will immediately act to advantage certain children and to disadvantage others in that some children have parents who can either teacher the mathematics themselves or who can buy in such help from a tutor. (ibid.)

There is clearly an assumed deficit here. IMPACT is attempting to side step this by pathologising direct teaching and valorising alternative modes of engagement with the activities. Merttens is attempting to avoid association with deficit models by shifting attention away from those areas in which deficits are presumed by her to exist. The form of argument clearly neglects the distinct possibility that parents might operationalise the activities in different ways and, no matter how cleverly the activities are constructed, create their own opportunities for direct teaching.

There has also, over time, been a softening of the distinction made between IMPACT activities and homework. Merttens & Stockton (1994) describe IMPACT work in the London Borough of Haringey as consisting of 'a structured programme of parental involvement in children's maths through the medium of shared homework activities' (p.1). Woods & Merttens (1994) refer to IMPACT as 'shared homework' and 'homework with chatter' (p.14). The IMPACT materials published commercially by Scholastic Press are referred to directly as homework activities. The distinction made between IMPACT and 'conventional' homework is that IMPACT *requires* collaboration between parent and child, whilst conventional homework is presumed to be either a solitary activity or one which encourages the parent to take up a didactic role. No reference is made to research into how parents and children actually carry out homework activities.

The growth of the project over the years has meant that the association between Merttens and the routine dissemination of IMPACT practice and the development of activities has loosened. A list of people able to provide in-service training for LEAs and schools wishing to implement or develop IMPACT is maintained by the IMPACT office at the University of North London. An annual IMPACT conference continues to provide a means for practitioners to share strategies. The widespread commercial availability of the IMPACT materials has meant that schools can implement an IMPACT-like approach without any contact with the project itself. Merttens left the University of North London in 1997 and the directorship the project passed to Lin Taylor. At the time of writing Merttens is the director of the Hamilton Maths Project, associated with the National Numeracy Project.

### 2.3.3 IMPACT RESEARCH

From its inception, the IMPACT project has been concerned with both research and development (see Merttens & Vass, 1987b). One of the strengths of the project has been the apparent willingness to engage in critical self-reflection and to produce accounts that attempt to relate IMPACT to wider academic debates and social trends. As Merttens (1987) states in her MEd dissertation:

> The IMPACT project attempts to bring about changes in classroom pedagogy and in the patterns of the routines and practices of home/school contact through intervention in those practices and in the classroom. It is concerned also with the effects of such changes at the macro sociological and also the micro psychological levels, and with an evaluation of the means whereby we can evaluate such changes. (ibid., p.1)

This commitment has resulted in a number of publications in which direct reference is made to empirical research. Merttens & Vass (1990) state that alongside the day-to-day development work of the project they implemented 'a continuous 'Evaluation, Monitoring and Research' (EMR) procedure' (p.15). To this end they collected information both as a direct by-product of the IMPACT process (for instance,

completed parent and child evaluation forms) and as a result of specific evaluation, monitoring and research activities (such as semi-structured interviews with teachers and parents and video-tape recordings of mathematical tasks being carried out in schools and homes)[5]. Though the intention to analyse data collected in this way and to publish the results has not been fully realised, some of the results of this work are publicly available.

In the first published research paper, Vass & Merttens (1987) describe their work as anthropological in nature, but with both psychological and sociological interests. They state that they

> take a largely ethnographic approach to the research. We need to inspect the social negotiation of problem-solving activities, the role of discourse structures in managing children's performances in its reflexive role of organising experience (ibid., p.806).

IMPACT is presented as an educational intervention that, as well as having tangible educational outcomes, provides a context for the engagement with a range of contemporary academic concerns in the fields of anthropology, sociology and psychology. For instance, the limits of both 'modernist psychology' and 'post-modern psychology' (ibid., p.809) in dealing with the relationship between social context and problem-solving are discussed. Whilst setting out an intellectual project and relating this to a specific form of educational intervention, it is unclear exactly how the statements made, for instance about the nature of collaborative problem-solving, relate to any form of empirical investigation. Reference is made to one particular IMPACT task and observations made by Vass & Merttens of children taking part in this activity. The observations are general (described in terms of what children tend to do in particular situations) and are used to illustrate or exemplify the argument put forward in the paper. Thus, although the paper marks out a set of concerns that could act as the focus for

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[5] A substantial proportion of this data has been made available to me by the IMPACT project.

empirical investigation, no empirical research is reported here nor are the parameters of a possible research programme drawn out.

The issues explored in this paper are not developed into any kind of empirical investigation in subsequent published work, though reference is frequently made to the potential of approaches based on Vygotskian psychology. Almost a decade later similar issues are being discussed, but still with no reference to systematic empirical investigation. Merttens (1996), for instance, discusses the nature of 'joint elaboration' of tasks in similar terms to this early paper with reference only to three apparently imaginary scenarios and statements about what might or is likely to happen. Subsequent more theoretical papers by Vass (see, for instance, Vass 1993a, 1993b) also draw on this early discussion.

A high profile is given in the IMPACT literature to the reporting of information on levels of parental participation. Merttens & Vass (1990) present figures on 'parental response rates' (p.15) collected in over the year 1987-8 (this data was originally presented in Merttens & Vass, 1987c). From their account it is not entirely clear how the data has been collected. With a sample of 1804 children (from the three participating LEAs) they claim that there was a 'mean response rate' of 77.5%. They state that 'this figure indicates how many children and parents responded by working at home on activities sent home weekly by the school' (Merttens & Vass, 1990, p.16). If broken down by age phase, the 'response rates' are as follows: nursery, 78%; infant, 85.2%; junior, 69.4%. Explanations are offered as to why there is an age related variation of this sort. It is claimed, for instance, that:

> The consistently lower figure for junior classes indicated to us that parents of children of this age-group perceived school work at home as essentially a solitary activity in the normal homework mode. In addition, designing interactive material for this age-group is a great challenge given the nature of the junior maths curriculum. (ibid.)

No further explanation is offered, nor is it clear on what basis these statements are made. Similarly, it is stated that the type of activity might account for variation in the

level of response from parents, as might the inclusion of a short rationale for the activity sent home. No evidence is provided to support these statements. With respect to extreme variation in responses within individual classes, it is stated that:

> In these cases where the response rate would pitch down to 10 per cent then up to 40 percent then up to 70 per cent and then back to 10 per cent, we were dealing with classes of children who had English as a second language *and* whose parents were in short-term housing. (ibid., pp.17-18, emphasis in original)

Again, it is unclear how the data relating to this was collected or on what basis such a statement is made. This is characteristic of the mode of presentation of data on levels of participation in IMPACT activities.

Merttens (1994a) makes reference to the results of subsequent annual monitoring of 'response rates'. Over the first three years of the project she claims that the levels of parental participation were as follows: nursery and reception (3, 4 & 5 year olds), 95%; Y1 to Y3 inclusive (6 to 9 year-olds), 86%; Y4 to Y6 (9 to 11 year-olds), 62%. It is claimed that subsequent yearly evaluations of IMPACT and 'the various independent evaluations of the project' (ibid., p.7) have shown 'no variation of more than 9% either way being recorded' (ibid.). No reference is made to the source of this data and I have not been able to find any published account of this work. No details thus appear to be available about the means by which this data was collected, sample size or form of analysis. Great claims are made, however, on the basis of this work. Merttens states, for instance, that:

> We have found no evidence that the number of responses is related to the social class or the ethnic or cultural make-up of the catchment areas of the school. The overwhelming factor affecting the number of responses in any one class or school is the teacher. This finding, which emerged from the work of the pilot study on IMPACT (1985-7), was replicated in the first three years of the national project (1987-90) and has been corroborated further in the recent study of eight Haringey schools in an area of extreme poverty and disadvantage. (ibid.)

No references are given to locate the research on which these assertions are based. In accounts of the research carried out in the early stages of the project (for instance Vass & Merttens, 1987; Merttens & Vass, 1987c; Merttens & Vass, 1990) no reference is

made to the systematic collection of data on social class or ethnicity[6]. Similarly the work relating to levels of participation and the social class and ethnicity characteristics of school catchment in the first three years of the national project does not appear to be publicly available and is thus not open to scrutiny. Presumably no evidence has been found because no information has been systematically collected that would allow such a relationship to be investigated. The results of the Haringey project cited are available (Merttens, & Stockton, 1994) and these are discussed below.

Although the basis on which these statements made by Merttens (1994a) is not clear, the apparent lack of evidence for a relationship between class and ethnicity and level of participation is constantly cited in the IMPACT literature. In a more recent discussion of 'response rates' Merttens (1996) again states that figures for level of participation

> remain remarkably consistent across different school catchment areas. We have found no evidence in seven years of monitoring IMPACT that the socio-economic class or ethnic composition of the catchment area of the school makes any difference to the number of parents and children sharing IMPACT activities on a regular basis. (p.417)

Furthermore, Morgan & Merttens (1995), again drawing on IMPACT monitoring data, state that 'the response rate does not appear to be related to the socio-economic class of the parents in the catchment area of the school' (p.23).

In a similar fashion, assertions are made in the IMPACT literature about the relationship between participation in IMPACT and the mathematical performance of children without any reference to specific pieces of research. For instance, Merttens states that:

> in the eight years in which IMPACT has been running , the quantity of evidence, from both quantitative and qualitative research as well as of a more anecdotal nature, has increased to

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[6] Merttens (1996) refers to Merttens, Vass & Curle (1989) in relation to 'the detailed monitoring and evaluation of the first two years of IMPACT' (ibid., p.417), but this paper is not listed in the bibliography. A paper by Curle (1993) gives an account of 'a series of open-ended, semi-structured interviews with teachers in five IMPACT schools in three outer London boroughs' each school having 'a high number of children form the Indian subcontinent and Pakistan' (ibid., p.130). This does not relate ethnicity to levels of participation.

> the point where it becomes difficult to entertain serious doubts that a shared maths programme will enhance children's learning of maths. (Merttens, 1994a, p.8)

Again this is repeated in more recent accounts. Merttens (1996) cites just one piece of work, an unpublished study 'carried out in Nottinghamshire by two county inspectors for mathematics' (p.418), to support the assertion that there is a positive relationship between participation in IMPACT and performance in school mathematics[7].

The third area in which claims are made on the basis of unreferenced research is the participation of parents in IMPACT meetings and the completion of diaries. Merttens (1996) states that:

> Schools in neighbourhoods predominantly populated by socio-economic groups D and E, such as in certain areas within the inner cities, do appear to have fewer parents responding through the weekly diaries and organised meetings. However, where these diaries are translated into the community languages of the ethnic groups there is some improvement in the number of responses. (p.418)

Once again, there is no evidence of data of this sort having been systematically collected as part of the general evaluation and monitoring process. If information on socio-economic status and ethnicity had been collected alongside information on diary completion (and comparative data on the effects of translation of materials), it would surely be possible to make more precise statements about the relationship being addressed here. In combination with information about levels of participation it would also, presumably, be possible to make more precise statements about the relationship between socio-economic status, ethnicity and level of participation (i.e. to be able to say more than that there is 'no evidence that the number of responses is related to the social class or the ethnic or cultural make-up of the catchment areas of the school' (Merttens, 1994a, p.7)).

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[7] No reference is given for this work, nor are details given except to say that the study is based on an analysis of seven year-old children's SATs results. Merttens (1994a) states that 'Independent research on IMPACT has been carried out by a number of LEAs and Master's and doctoral students in various institutions' (p.6). This Nottinghamshire study is the only reference I can find to this independent research.

There is one piece of empirical work carried out within the IMPACT project, Woods & Merttens (1994), that could have provided the basis for the exploration of the relationship between the social class characteristics of a school's intake and the manner in which parents use the IMPACT diaries. Although broad approximations of the intake characteristics of the schools are given, no attempt is made to address the relationship between these characteristics and the kinds of comments made by parents. This particular study is discussed in detail in Chapter 6. In relation to the discussion here, it is sufficient to observe that the treatment of data on intake characteristics in this study gives some indication of the reasons why no relationship between social class or ethnicity and any aspect of participation in the IMPACT process has been found in the IMPACT research—such a relationship has not been sought or tested in any way.

Merttens & Stockton (1994) report on a Department for Education (DFE) funded project run for one academic year (1993-4) in the London Borough of Haringey. Support was provided for IMPACT to run, in modified form, in eight schools in a part of the borough described as being 'an area of extreme social and economic disadvantage' (ibid., p.2), though no indication is given of how this judgement was made. The research component of this intervention consisted of (i) pre- and post-intervention mathematics tests; (ii) questionnaires to all 228 parents of children in the participating classes; (iii) semi-structured interviews with 21 parents and 11 teachers; (iv) three case studies consisting of interviews with teachers, parents and other family members, at least one video-taped IMPACT task and some 'structured observation'. The stated conclusions of the study are (i) that parents, teachers and children 'enjoyed and appreciated' the IMPACT activities and that 'regardless of social class, or the first language spoken in the home, parents and their children were overwhelmingly positive about shared maths homework' (ibid., p.24); (ii) that according to the reports of parents and teachers and the test results 'the children gained from the shared homework tasks, both in terms of their mathematical competence and in terms of the development of

positive attitudes to the subject' (ibid.); (iii) some resources are necessary for schools to implement a shared maths programme, notably materials translated into community languages and access to a borough-wide support teacher.

Care should be taken in the interpretation of the outcomes of this project. Only 142 of the questionnaires were returned. No information is given regarding the characteristics of the non-returners; important if we are to take seriously Toomey's (1993b) observations about difficult to reach parents. The responses given in the returned questionnaires are taken to represent the whole group. The 21 parent interviewees were selected from those who returned the questionnaires. We are not given details of either the questionnaire or the interview, nor are we given details of the principles for the selection of the interviewees or for the case studies.

The same ten item test was administered at the beginning and end of the intervention period. There was no control group to enable judgements to be made about the specific effects of the intervention. Similarly, statements are made about the positive orientation of parents and children towards the intervention 'regardless of social class' (Merttens & Stockton, 1994, p.24) without any indication of how judgements of class membership were made or how comparisons were made which enable social class to be discounted as a variable. If it were the case that all the children and parents were classified as working class, as is suggested by the socially homogenising description of the area in which the schools are located as 'an area of extreme social and economic disadvantage' (ibid., p.2), the effects of social class could not be discounted, even if a gain in, for instance, mathematical attainment (as a result of the intervention) across the group could be demonstrated.

Given the above, there seems to be no justification for the claim made by Merttens that:

> These findings are of crucial importance to every class teacher and educationalist committed to egalitarian education. Our findings suggest that shared homework materially improves the

> chances of traditionally 'disadvantaged' children (working class, black, asian, etc.) succeeding at school. (Merttens, 1995a, p.14)

This would seem to be a gross over-generalisation from a limited and methodologically flawed piece of work. This is not to deny, however, that some interesting points are raised in discussion of the material reported.

A study of 'teachers' perceptions of parental involvement in mathematical learning' (Morgan & Merttens, 1995) treats empirical research in a similarly cavalier manner. Here questionnaires are given to 48 participants in 'a mini-conference for a small, selected group of teachers and advisors'. Following the completion and return of 37 of these questionnaires, a group discussion was held. The principles of selection of the sample are unclear, as is the relationship between the questionnaire and the discussion. Furthermore, the rationale for each question is unclear. The results of the questionnaire are presented question by question as percentages of respondents answering in particular ways. The responses to the questions are presented with commentary but without any coherent analysis. It is not clear whether the questions are multiple choice or open-ended (if the latter, no indication is given of how the responses are classified).

The questions probe the respondents' perceptions of the factors influencing the uptake of IMPACT, the value of IMPACT for themselves and parents, the kind of support provided by colleagues and parents and so on. The conclusions drawn appear to bear little relationship to the responses to the questionnaire. For instance, in their discussion of responses, Morgan & Merttens state that teachers

> do not generally welcome any change in their role in response to parental pressure and do not credit parents with an expertise or knowledge that could serve to balance any partnership ... many parents are seen as failing to understand the mathematics involved and thus requiring training of some sort and those that do demonstrate an expertise are dismissed as 'academic'. This betrays a stereotypical view of parental opinions on the part of teachers and confirms the view that teachers feel parents are over-formal in their approach to mathematics and generally uninformed about the process of educating children. (ibid., p.27)

How these statements can be derived from the responses to the questionnaire is not clear.

There are studies carried out within the IMPACT project that I have not discussed here. Merttens (1994b) presents 'stories' relating to parental participation in record keeping and assessment. These are subjected to an unexplicated 'phenomenological analysis' (p.38). From my perspective it is difficult to see this as relevant research. Merttens & Newland (1995) outline the 'shared writing' project and draw out some illustrative material from the early stages of their fieldwork. Again, this paper, which cites work but does not have a bibliography, cannot really be considered a research report. Reference is made to the outcomes of this research in a subsequent book aimed at a practitioner readership (Merttens, Newland & Webb, 1996).

One conclusion that can be drawn from this discussion of IMPACT research is that the high ideal of running a rigorous evaluation, monitoring and research programme alongside the development work has not been realised. The research discussed above is without exception methodologically flawed and, whilst interesting issues are sometimes raised, gross over-generalisations are frequently made. Some of these, in particular those statements relating to the relationship between social class and ethnicity on the one hand and levels of participation and modes of engagement on the other, and statements relating to the nature of the relationship between teachers and parents, have become recurring features of the reporting of IMPACT work. It is clear that an open, interrogative relationship has not been established between the research and the practice of IMPACT. It must be noted that very few of the studies discussed here are published in refereed journals. Most are referred to in publications intended for a largely professional audience or are in collections of conference papers published by the IMPACT project.

## 2.4 Parental participation, deficit and difference

A dominant concern in the policy shifts and initiatives discussed above is the perceived lack of articulation between the school and the home with respect to the achievement of children in particular areas of the school curriculum (notably in the area of literacy). A separation is posited between the school (as a public institution charged with general responsibilities for the management of the educational careers of its students) and the home (as a private institution in which children are inducted into specific sets of local cultural practices and acquire fundamental competences). This perceived separation has in turn been taken as problematic. The school is viewed as, firstly, failing to realise the full pedagogic potential of the home, secondly, of marginalising parents in general and, thirdly, of using differences in the domestic circumstances of students to legitimate differential achievement in formal education[8].

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[8] Most notably, work on school effectiveness has attempted to demonstrate that 'although the ability and family backgrounds of students are major determinants of achievement levels, schools in similar social circumstances can achieve very different levels of educational progress' (Sammons et al, 1995, p.4). In the United Kingdom this movement began as a reaction to the dominance of psychologically and sociologically oriented educational research which placed the characteristics of the individual and the family at the heart of explanations of differential attainment at school (see reviews of the development of school effectiveness research by Reynolds et al., 1996, and Sammons et al., 1995). Similarly in the United States school effectiveness research developed in response to the claims that the Coleman Report (Coleman et al, 1966) demonstrated that schools had little or no effect on student achievement. As Reynolds et al (1996) have noted, the distancing of school effectiveness research from sociological theory and research, and the perceived curtailment of interest of sociologists of education in developing an 'understanding of the school as a determinant of adolescent careers' (Reynolds et al, 1996, p.133), has restricted the capacity of researchers in this field to gain a sufficiently sophisticated understanding of the relationship between social background and attainment in school. The social characteristics of students, their family background and practices within the home have, paradoxically, re-emerged in school effectiveness research. Reviews of research in both Europe (e.g. Sammons et al, 1995) and North America (e.g. Chrispeels, 1996) have noted the widespread identification of home-school partnership as a key factor in effective schooling. Research on the effects of the social class composition of school intake on student attainment, such as McPherson & Willms (1987) and Lauder & Hughes (1990), has also re-awakened an empirical interest in the social composition of school intake (for a discussion of research into school-mix effects see Thrupp, 1995). As Scheerens (1991, p.385) states 'including contextual variables like student body composition ... can be seen as a relatively new and very interesting development in school effectiveness research.' In the United States debates around the desegregation of schools has generated a considerable body of research into the effects of changes in the social and ethnic composition of school intakes (e.g. Rist, 1979; Rosell & Hawley, 1983; Shujaa, 1996) and maintained interest in this area of research.

The initiatives take as their focus the practices of the school and apparently attempt to decrease the degree of insulation, or the strength of classification, between home and school. The means by which these home-school initiatives set out to achieve this weakening of the perceived boundary between home and school, to release the full pedagogic potential of the home, involves transformation of the values of internal classification (i.e. the strengths of boundaries within the school) and of internal and external framing (i.e. the strength of regulation of communicative relations within and between communicative contexts, for instance the school and the home).

Fundamental to these forms of parental involvement initiatives, including IMPACT, is the recognition of a high degree of variation between homes in the extent that children are prepared for schooling and supported in their passage through schooling. These differences can be addressed either by transformation of domestic practices (i.e. attempting to make those homes that are seen as least supportive more like those that are seen as being most supportive) or by transformation of school practices (i.e. attempting to transform those school practices that are seen to disadvantage or advantage particular groups so as to provide more equitable access to educational attainment). The former approach can clearly be associated with a deficit model of parenting, in that the home of underachieving pupils is seen as pathological, and the latter with difference models, in that the school is seen as pathological in its production of underachievement amongst pupils from particular social and cultural groups (see recent discussion of the deficit or difference debate in Valencia, 1997).

The initial argument for the form of intervention taken by IMPACT rests on the notion that there is a lack within the home. This lack may be in the form of an absence, under-development or under-utilisation of particular skills, knowledge, dispositions and/or certain forms of practice. Merttens & Vass (1987a) identify a lack in the mathematical knowledge of the parent which can be addressed by IMPACT. They state that parents who

> opted out of [the education] system relatively early on, are able, through being part of an actual learning situation in mathematics, to see how that process is working and also, to learn some mathematics (Merttens & Vass, 1987a, pp. 24-25).

They also state that parents who feel they are unfamiliar with contemporary school mathematics and who 'yearn to see pages of sums' (p.25) will also gain from being involved in school mathematics activities. It is being assumed here that this engagement will reveal the value of contemporary school mathematics tasks which diverge from those with which the parent will be familiar from their own schooling. IMPACT thus addresses two forms of perceived parental deficit: cognitive (specifically in terms of mathematical skills and knowledge) and pedagogic (specifically in terms of understanding how school mathematics is most effectively taught). In marking out parents who opted out of the school system as in need of particular attention a parallel is drawn with attempts to explain differences in the attainment of children in school in terms of the characteristics of their home environment.

As Merttens recognises in a later paper (Merttens, 1996), there is clearly danger that IMPACT will become subject to criticism as being founded on a deficit model of parenting, where some home environments are viewed as inferior to others in terms of preparation for school and subsequent support for the child as they progress through school. One possible reaction to this accusation is to acknowledge differences but take care to be seen not to value any one set of cultural practices above any other.

IMPACT aims to provide the means for primary schools to foster increased involvement of parents in the mathematics education of their children and to develop written interchange concerning school mathematics between parents and teachers. Like similar projects in the area of literacy (see discussion in Section 2), this is a form of intervention initiated by the school with the intention of realising the hitherto unfulfilled, or undervalued, pedagogic potential of the home. As the project aims to be of benefit to all children, provides a basic undifferentiated process (although this can clearly vary in

its form of realisation in schools and homes) and elides the possibility of socially differentiating effects (see Merttens, 1996; Merttens, Newland & Webb, 1996), it is clearly assumed that all homes have equal pedagogic potential and that this potential can be realised utilising a common set of intervention strategies. In other words, the project operates on the basis that all parents have equal pedagogic competence but that there are tangible differences in performance. The provision of home activities by the school and the opening of dialogue with teachers creates the context within which the pedagogic effectiveness of the performance of parents can be maximised.

Merttens clearly appreciates the tensions created by bringing together a school-initiated home-intervention programme with this form of competence based model of pedagogy. Merttens (1996), in a paper intended for a North American readership, argues that whilst parental involvement initiatives are invariably associated with deficit models of parenting, curriculum based projects such as IMPACT and PACT 'are *less* likely to produce mechanisms which serve to marginalise particular parents or types of parenting and therefore will probably not act to sharpen existing social divisions and hierarchies' (ibid., p.412, emphasis in original). Further, it is argued that curriculum based projects, in contrast to those initiatives that target parenting practices and home environment more generally 'can be a means whereby parents *can* do what they want to do or *are doing* in any case, such as reading with their children or sharing mathematics activities' (ibid., p.412, emphasis in original). Presented in this way the project can now be seen as addressing differential access 'to resources such as books or mathematics activities which they may wish to use' (ibid.). Granting parents a high degree of autonomy and identifying differences between households in terms of access to materials enables Merttens to be seen to acknowledge and value 'the diverse and varied character of culturally-derived parenting practices' (ibid., p.416).

This is problematic. IMPACT is, as we have ascertained above, a school-initiated intervention based on the assumption that the full pedagogic potential of the home (or,

possibly, some homes) is not realised without some form of input from the school. In the above quote, homes are differentiated in terms of material resources. This, in turn, raises the question of what the effects of material differences between households might have been prior to the intervention of the school. The stress placed here on material differences thus has the paradoxical effect of working against the denial by Merttens that social class is a factor in form and level of participation, given the close association of material disadvantage with social class[9]. In the earlier IMPACT literature it is not, in fact, material resources that are given priority, but rather the form of activity in the home that takes place around the school mathematics tasks and the engagement of parent and child in the operationalisation of the task. The tasks are selected by the teacher to fit with the planned curriculum of the school and to maximise the pedagogic possibilities of the home. They are not selected by parents.

The problems generated for intervention programmes of having to ascribe equal value to all forms of domestic practice are most acute when it comes to the question of non-participation. By adopting what appears to be a cultural relativist position, Merttens is forced to accept that, with the ascription of equal value to all forms of cultural practice, IMPACT has to be presented as an offer to parents which they might choose to accept or reject. In order not to be seen to pathologise those parents who do not take part, non-participation is presented as a valid product of parents' 'inalienable right to choose non-involvement and to give priority to other modes of practice within their home.' (ibid., p.417). Teachers are urged not to stigmatise those parents who do not take part as 'bad parents'. However, the value of IMPACT revolves around the joint conduct of activities in domestic settings and on the development of a dialogue between parents and teachers. The former engages parent and child in mutually beneficial activity around school activities in the home. To argue that non-participation does not

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[9] The focus on poverty and economic disadvantage, rather than on social class, is characteristic of much contemporary writing on the relationship between school and educational outcomes.

disadvantage parents and children is to assert that the potential that is realised through the IMPACT tasks has already been realised in the homes of those who do not participate. This would not seem to be in step with earlier claims made for IMPACT. The dialogue developed is supposed to enable the voice of the parent to be heard within the school and for information to pass from the home to enable more accurate and ecologically valid judgements to be made within the school. Again, if the claims made for IMPACT can be substantiated, non-participation would appear to disadvantage both parent and child. Furthermore, the success of the project, both within each school and more generally, is, as we have seen, measured in terms of the percentage of parents participating (see, for example, Merttens & Vass, 1990; Merttens & Stockton, 1994; Merttens Newland & Webb, 1996). This would appear to militate against the non-stigmatisation of the non-participant. Levels of participation are, it is argued (Merttens, 1996; Merttens & Vass, 1990; Merttens, Newland & Webb, 1996), related more to the enthusiasm of the teacher than to the social characteristics of the school intake. In these circumstances, it is difficult to see how non-participation could not have some tangible impact upon the individual child's experience of schooling. The association of high levels of parental participation with the characteristics of the teacher rather than those of the parents or children is, paradoxically, more likely to lead to the stigmatisation of the non-participant at the level of practice, as the teacher with low levels of participation is likely to be negatively evaluated within the project.

These tensions are not, of course, unique to IMPACT. Any initiative which makes planned interventions into the home will encounter similar difficulties, as is evident in the discussion of family literacy projects in the previous sections. Intervention projects are by necessity founded on the identification of some form of deficit or lack for which the intervention is designed to compensate. The lack may be seen as material, cultural or cognitive. The object of the intervention may be the lack itself or the presumed consequences of the lack. The implementation of a training programme in specific

literacy techniques for parents of low-achieving children (such as the teaching of the Pause Prompt Praise technique, based on the work of Clay (1979; 1991), to parents in New Zealand, reported by Glynn, 1996) might be justified on the basis of directly compensating for a lack of effective literacy teaching strategies amongst a particular group of parents. On the other hand, this could be viewed as the treatment of a specific product of, say, disadvantaged material circumstances or forms of social organisation that alienate parents from formal schooling. In both cases some form of deficit has been identified. In an attempt to overcome accusations of creating a hierarchy of cultures or cultural practices, some projects have adopted an emancipatory stance, claiming that through their interventions they are empowering parents (see, for example, Wolfendale, 1992). Ultimately the question has to be asked, however, who is empowering whom? Intervention projects cannot escape from the fact that, however they operate, they identify a need from outside the site of their intervention and, through their interventions, feed in something (procedures, skills, knowledge, 'awareness', material resources) with the intention of affecting some form of transformation. Whatever the ends, the means must involve at some stage the identification of an absence, or pathology, of some kind.

Given the recent resurgence in deficit thinking associated with right wing attacks on, for instance, the adequacy of the parenting practices of single mothers and the welfare policies that support them (exemplified by the work of Herrnstein and Murray, 1994: see Valencia, 1997, and Fraser, 1995, for a range of critical perspectives on this work) the above places intervention projects in an uncomfortable position.

## 2.5 Conclusion

I have attempted to describe the IMPACT project within the context of increased international interest in the enhancement of parental involvement in schooling at the level

of both policy and practice. IMPACT clearly relates to other initiatives, particularly those concerned with parental involvement in literacy development, but is distinctive in its focus on school mathematics and the manner in which it attempts to bring together development and research. The review of IMPACT literature above, serves to give a flavour of how the project operates and the nature of its research programme.

The form of intervention adopted by the IMPACT project, the claims made for IMPACT and the statements made in the reporting of research carried out within the project raise a number of key sociological issues. As has been noted above, the project directors have frequently presented themselves as having sociological concerns, but these concerns have not been fully articulated in their writing nor have they been realised in the form of empirical research carried out within the project. In particular, reluctance to address systematically questions relating to differences in parents' local pedagogic practices and diversity in the form of relations between home and school has led IMPACT, and projects like it, into the midst of the longstanding deficit/difference debate. The IMPACT project directors have consistently denied that the social class profile of a school's intake is a key factor in shaping either the form of realisation of the intervention or the success of the project in enhancing children's achievement in school mathematics. The relationship between social class, local pedagogic practice, orientation to schooling and modes of parental participation is a central concern of this thesis.

Although research related to the IMPACT project has not directly addressed these issues, there are a number of recent empirical studies in the sociology of education which have focussed on various aspects of the relationship between social class and parental participation in schooling. As a precursor to presenting my own research, I shall review a range of relevant research in the next chapter. This review will address both the substantive claims of the research and the forms of sociological explanation to which the researchers make reference in presenting their work.

# Chapter 3 Sociological research on parental participation and home-school relations

## 3.1 Introduction

Although consideration of the relationship between schooling and the home background of children has been an enduring theme in the sociology of education, relatively little attention has been paid specifically to the question of parental participation in schooling. Conversely, although numerous studies of parental involvement specifically index social variables (such as social class, gender and ethnicity), few, as we have seen from the discussion of literature in the areas of literacy and school mathematics in Chapter 2, draw explicitly on sociological theory or address specifically sociological questions. In the first part of this chapter, I am going to review five clusters of recent, relevant empirical work. All the pieces of research are explicitly sociological in approach and all take the parents of primary school children as their empirical focus. Whilst none of the work addresses directly the conduct of school-like activities within the home or the development of dialogue between parents and teacher, all the studies raise important questions for the development of a sociological analysis of this form of home-school relationship. The research studies on which I will focus are:

- Lareau's exploration of social class differences in parental participation in USA elementary schools (Lareau, 1987, 1989, 1992; Lareau & Shumar, 1996);
- Reay's study of social class differences in mothers' involvement in their children's schooling, conducted in two London primary schools (Reay, 1998).

- Vincent's studies of parent-teacher relationships in five primary schools in one inner London borough (Vincent, 1993, 1995, 1996) and of 'parent centred organisations' (Vincent, 1997; Vincent & Warren, 1998)
- Research by Ball and colleagues on social class and parental choice of secondary school in the UK (Ball, 1997; Ball & Gewirtz, 1997a; Ball, Bowe & Gewirtz, 1995; Bowe, Gewirtz & Ball, 1994; Reay & Ball, 1997, 1998);
- Research conducted by David and colleagues into relations between mothers and schooling in the UK (David et al, 1993; David, West & Ribbens, 1994; Ribbens, 1993a, 1993b; West et al, 1998).

In each case I will briefly describe the work, draw out the contribution this work makes to our sociological understanding of parental participation in schooling and provide a critical evaluation of the work. Following this review, I will address the relationship between this work and contemporary theories social and cultural reproduction, with particular reference to the work of Pierrre Bourdieu. Finally, I will outline the contribution made by my own research in relation to this discussion.

## 3.2 Lareau: social class variation in parental participation in USA elementary schools

Lareau (1987, 1989, 1992) conducted an ethnographic study of parental participation in two elementary schools in California, one with a white working-class intake (Colton school), the other with a white middle class-intake (Prescott school). Over a period of six months, Lareau conducted participant observation in one first-grade class in each school. Following this, six children were selected from each class for further study. This included in-depth interviews with the parents and teachers. Lareau sets out to

address the asymmetry of power that exists in interactions between parents and teachers. On the basis of her analysis she argues that particular forms of parental participation can act to advantage certain, already advantaged, groups.

Lareau found that the requests for parental participation made by the staff of the two elementary schools studied were broadly similar in both form and frequency. Both schools actively sought to involve parents through home reading schemes, requests to work alongside teachers in the classroom and invitations to attend a range of formal and informal events. There were, however, inequalities inherent in the proposed form of partnership, both between teachers and parents, and between parents of different social class backgrounds. For instance, although all teachers encouraged parents to voice their concerns about their children not all voiced concerns were welcomed. As parental performance was taken seriously by teachers and was noted and remembered by them, it becomes important for the parent to be seen to participate in schooling in what is thought by teachers to be an appropriate way.

Lareau found differences in both the levels and forms of parental participation between the two schools. Not only was parental participation at Prescott, the middle class school, higher but parental initiated interactions were more frequent and were more likely to relate to the academic progress of their children. Parents here also tended to make more specific requests to the school regarding matters such as resources and homework and were more at ease in their interactions with school staff. The parents of children at Colton, the working-class school, in contrast initiated few communications with the school and those that did take place were more likely to be about matters such as lunchboxes or playground activities than about academic progress. These parents were seen as being ill at ease in their interaction with staff at the school. In both schools, level of parental involvement was taken as an indication of the value placed on schooling by parents. Colton parents were thus perceived as being less concerned about the progress of their children at school.

As Lareau points out, material, social and cultural factors differentially place parents in relation to the requests made by the school. On the most obvious level this might include the greater ease with which middle class parents can manipulate their working arrangements to participate in day-time events or work in the classroom alongside the teacher. Less visibly it might include differences in the perception of the relationship between work and home, and thus between school work and appropriate home activity. Some of the working class parents in Lareau's study indicated that they felt that there should be a high degree of separation between work and home. These parents, though they clearly valued education, saw schooling as work and thus felt that like work it should be left behind at the end of the day. A number of the working class parents also expressed unease about the contribution they could make, given their own educational backgrounds, to the education of their children. This, combined with the desire to maintain the boundary between 'work' and home, led to a tendency to see the education of their children as strictly a school matter, something for which teachers, as 'educated people', should take responsibility. This contrasts with the views expressed by the middle class Prescott parents who saw education as more of a partnership and scrutinised and monitored the educational experience of their children. Additionally they considered themselves to be, at least, the social equals of teachers, that is that they themselves had equal or superior educational skills and qualifications and, thus, that teachers were not doing anything they could not do; it was merely a question of division of labour.

Lareau (1992) has also drawn on her fieldwork at Colton and Prescott schools to explore gender differences in parental involvement. As part of the fieldwork, she conducted two individual semi-structured interviews with the mothers of each of six target children (three boys and three girls) in each of the schools. In separate sessions she 'interviewed most of their fathers' (ibid., p.210). On the basis of these interviews she describes differences in the gendered division of labour with respect to child care

and involvement with the school. In common with much other work in this area (see discussion of work by Ball and colleagues and David and colleagues below) Lareau provides a detailed account of the orientations and practices of the middle class families, with copious quotes, but very little detail about the working class families. She claims that in working class families there is likely to be a stricter 'segregation of gender roles' (ibid., p.220). The working class fathers, mothers and children in Lareau's sample appeared to see child care and school involvement as essentially women's work with fathers playing only a peripheral part. Whilst the middle class mothers in her sample also appeared to take most of the responsibility for involvement in schooling (she states that 'husbands appeared to depend on their wives for transmitting class advantages to their children' (ibid., p.209)), fathers were involved to a far greater extent. By being involved in parent-teacher conferences, making decisions about their child's schooling, helping their children at home and showing willingness to participate in activities within the school, middle class fathers conformed more closely to the ideal held by teachers, thus making it more likely that middle class families are seen by teachers as being appropriately supportive of their children. In this way differences in the modes of involvement in schooling of working class and middle class fathers are seen as advantaging middle class children. With respect to gender inequalities, Lareau states that 'as I have shown, 'parents' clearly means 'mothers', especially in working class communities' (ibid., p.221).

A more recent study by Lareau (Lareau & Shumar, 1996), carried out in three elementary schools and with a larger sample of parents, reinforces many of the observations made in the earlier study. In discussing the limitations placed on working class and lower class families in meeting the expectations of teachers, Lareau & Shumar draw attention to four key factors. Firstly, differences in the educational attainment of parents. Middle class parents, often college graduates are, they argue, better placed to help their children with schoolwork and more confident in doing so. Secondly, there are

variations in the degree to which parents see helping with schoolwork a legitimate activity. Lower and working class parents are, they claim, more likely to see a greater separation between home and school and wish to see the education of their children as the responsibility of the school. Thirdly, the high degree of occupational flexibility available to middle class parents compared with inflexibility of hourly paid lower income occupations. Combined with the limited resources (manifest, for instance, in lack of personal transport) and the heavy personal demands made on the time (in personally having to meet child-care responsibilities, for example) of low income families, this severely limits their ability to organise their time to fit with school schedules. Fourthly, there are marked differences in the extensive social networks of middle class parents, in which they frequently interact with other parents from the same school, and the largely kinship based interactions of lower and working class families. The former results in the circulation of information about the school and, indeed, specific teachers, leading to the development of detailed knowledge of the school and how it operates. This, they argue, is unlikely to be so effectively achieved within kinship based patterns of interaction.

Lareau & Shumar claim that the forms of parental participation currently promoted by policymakers and teachers neglect group differences in the social and cultural resources of parents and, in doing so, act to advantage middle class parents and, in some cases, have tangible negative consequences for working and lower class parents and their children. With regard to the claims made for the positive effects of parental participation on children's academic attainment in school, they state that 'the field lacks a sufficient data base to support the extravagant claims of some educators' (ibid., p.34). They caution against the adoption of mandatory parental involvement and suggest that there should rather be a campaign to 'sell' appropriate forms of participation to parents and help given to teachers in the design of activities that match the levels of knowledge

and pedagogic skill, dispositions and forms of social organisation of working class parents.

Lareau is critical of sociological approaches to family-school relationships that fail to account for 'the influence of social stratification on individual biographies' (Lareau, 1989, p.4) and that, as a result, produce descriptions that do not account for precisely how advantage is conferred to whom, and under what circumstances such social class related advantage has significant effect. She is also critical of forms of explanation that presume a deterministic relationship between social class, values and behaviour (i.e. that social class specific values are held by parents, and passed on to their children, which directly influence their behaviour). Her objection is that these approaches fail to recognise that 'in addition to values, social class provides individuals with resources which they can effectively marshal in the social sorting process' (Lareau, 1989, p.4). In order to escape from this overly deterministic position, in which the agency of the individual is attenuated, Lareau looks to the work of Pierre Bourdieu. Drawing on Bourdieu (she cites Bourdieu 1977a; 1977b; 1984 and Bourdieu & Passeron, 1977), Lareau sees individuals as actively deploying specific social and cultural resources (their 'cultural capital') within strategies in an attempt to improve their social position. Differences in the form and frequency of parental involvement in schooling are seen as being related to differences in the cultural capital of parents.

> This perspective emphasises the importance of the structure of the school and of family life and the dispositions of individuals (what Bourdieu calls 'habitus') in understanding the different levels of parent participation in schooling. The standards of the school are not neutral: their requests for parent involvement may be laden with the cultural experiences of intellectual and economic elites. Bourdieu does not examine the question of parent involvement in schooling, but his analysis points to the importance of class and class cultures in facilitating or impeding parents' negotiation of the process of schooling.' (Lareau, 1989, p.8)

Whilst Lareau clearly recognises the potential of Bourdieu's work for her own project, the concepts she draws from Bourdieu do little work in her analysis. For

instance, she identifies relations between working class families and schooling as characterised by separation and those of the upper-middle classes as characterised by interconnectedness, but is not able to translate these differences into terms that are meaningful within Bourdieu's conceptual framework. Lareau makes reference to both class-based 'habitus' and differences in 'cultural resources'. Lareau argues that her study suggests that in specific settings, the 'cultural resources' of the middle class family become a form of 'cultural capital' (Lareau, 1987, p.83). It is not clear, however, how these concepts relate, for instance, to the five key social class based differences in 'resources' and 'dispositions' (see Lareau, 1989, pp. 171-173) which she identifies as conferring advantage to middle class parents in their interaction with teachers and participation in schooling: competence to help their child (related to parents' educational level); social status (relative to that of the teacher); income and material resources; the style, routine and purpose of their paid employment (which affects flexibility to meet the demands of the school and the strength of classification of home and work and consequently home and school); and the extent of peer networking (and thus access to information). How, in Bourdieu's terms, these might constitute either the source or substance of cultural capital is unclear.

Bourdieu's conception of capital is complex, and it is not appropriate to enter into a comprehensive discussion here. The theoretical productivity of Bourdieu's conception of capital is that it can take both material (economic) and immaterial (symbolic, that is cultural and social) forms, that capital is transmutable from one form to another and that the manner in which the various forms of capital operate varies according to the field of activity in which it is deployed. Bourdieu states:

> *capital presents itself under three fundamental species* (each with its own subtypes), namely economic capital, cultural capital, and social capital (Bourdieu 1986). To these we must add symbolic capital, which is the form that one or another of these species takes when it is grasped through categories of perception that *recognise* its specific logic or, if you prefer, misrecognize the arbitrariness of its possession and accumulation ... I have analyzed the peculiarity of cultural capital, which we should in fact call *informational capital* to give the

notion its full generality, and which itself exists in three forms, embodied, objectified or institutionalized. Social capital is the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition. Acknowledging that capital can take a variety of forms is indispensable to explain the structure and dynamics of differentiated societies. (Bourdieu in Bourdieu & Wacquant, 1992, p.119, italics in original).

As Calhoun (1993) observes, Bourdieu (1986) has argued that the 'status attainment' of children can be promoted by various forms of parental activity (labour) which are not directly dependent upon economic advantage, an effective way of disguising the 'inheritability of position' (Calhoun, 1993, p.70). Lareau does not provide the principles by which we might recognise empirically various forms capital or parental labour either in her own terms or in a manner that is consistent with Bourdieu's framework. She acknowledges there is variation in 'cultural resources' both within and between social classes and the potential value of these resources varies from one setting to another, but no description of this variation is given nor are the consequences of the differential value attributed to particular resources in different settings explored (see Lareau, 1987, pp. 82-83). Ultimately the designation 'cultural capital' is used by Lareau as no more than a label to identify that which upper-middle class parents have but working class parents do not have.

Lareau fails to construct the principles by which she can move between her empirical data and the abstractions of Bourdieu's theory. She can index the analytic potential of concepts drawn from Bourdieu's work but cannot realise this potential in either the description of her own data or the transformation of Bourdieu's theory. The conscription of Bourdieu acts to affiliate Lareau's research to other work, notably anthropological approaches to the study of minority groups and education (discussed by, for instance, Foley, 1997), a body of work which has developed in response to the rise of deficit and 'culture of poverty' theories in the explanation of educational

underachievement of ethnic minorities in western industrial societies[1]. It also acts to distance her work from the approaches she identifies as being inadequate. Unfortunately, the manner in which grand theory is incorporated into Lareau's work also limits the potential for conceptual development from her own research. This difficulty is noted by Lareau in, for instance, her own narrative account of the conduct of her research (see Lareau, 1989, pp.187-223). She remarks on the difficulty she experienced in determining 'the 'proper' relationship between theory and qualitative data' (ibid., p.210). It is notable that there has been little development between her early papers, such as Lareau (1987), and the reporting of more recent work, such as Lareau & Shumar (1996). Neither the production of a language of description (Bernstein, 1996) by which to bridge the discursive gap between theory and empirical data nor the development of middle range theory (Merton, 1968) to explain the phenomena described have been possible. Nonetheless, Lareau's work provides a detailed and illuminating account of the ways in which parents from different social class background relate differently to involvement in schooling and how this acts to advantage middle class children and disadvantage working class children. Many of the themes discussed by Lareau are taken up in my own research, albeit from a somewhat different perspective.

## 3.3 Reay: mothers' involvement in their children's schooling in two London primary schools

Reay sets out to investigate 'how parental involvement sustains rather than erodes existing social inequalities' (Reay, 1998, p. 2). Like Lareau she focuses on the on-going, everyday participation of parents in their children's schooling, rather than a

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[1] Although Lareau (1987) acknowledges that Bourdieu's position has also been identified with 'deficit' theories (see discussion by Pearl, 1997) and has been criticised for being overly deterministic (by, for example, Connell et al, 1982).

specific parental involvement initiative or intervention. Also like Lareau, her empirical work consists of ethnographic fieldwork conducted in two primary schools selected to provide a sharp contrast in the social class composition of their intakes. In her discussion, she also deploys concepts drawn from the social theorising of Pierre Bourdieu. Reay's work differs from that of Lareau in that she is particularly interested in the gendered nature of the division of labour within the home and with the manner in which both class and 'race' hierarchies permeate parent-teacher interactions and operate in the wider educational market place. This is reflected in the characteristics of her sample and the nature of her analysis.

Reay's empirical work focuses on two primary schools in North London: Milner, described as 'white, middle-class' in character (ibid., p.4) and Oak Park, described as being 'multi-ethinc, working-class' in nature (ibid.). Her fieldwork extended over a period of 17 months and included both working in Year 5 classes in both schools and formal and informal interviews with 20 Milner mothers and 13 Oak Park mothers. In the presentation of her account of this fieldwork she focuses on debates around the social class positioning of women, the nature of women's work and educational experience as they relate to their children's formal and informal education, class based differences in forms of interaction between parents and teachers, class and 'race' differences in mothers' and children's social networks, domestic routines and out-of-school time activities, and the marginal nature of paternal involvement in children's schooling.

Reay presents an account of mothers' self-positioning within the class structure and of their modes of engagement with the school and with their own children in terms of their 'cultural capital'. This, in turn, is related to their own personal history and educational experiences. For example, amongst her sample a high proportion of middle class mothers reported having their schooling supplemented by being taught at home by their own mothers. This experience was reported as being unavailable to the majority of

working class parents in her sample, as their mothers worked full-time outside the home. This difference in experience is seen as laying the foundation for a potential difference in the domestic practices of the middle class and working class mothers in Reay's sample. She states that 'This class difference is related to differences in cultural capital' (ibid., p. 55). It is, however, difficult to see what, in this and in other cases, constitutes cultural capital. Reay goes on to state that one consequence of this experience is that teaching one's own child at home 'is already ingrained in the habitus that a majority of the middle-class women bring to the contemporary educational field'. The belief that children's formal education needs to be supplemented by teaching outside the school is subsequently translated into the practice of employing a home tutor. This is a response to the rarity of domestic time experienced by the middle class women most of whom themselves were working full-time. Rather than being the product of cultural capital this would seem to represent the translation of economic capital into social capital (in the form of the potential enhancement of the educational career of the child).

The educational experiences of the majority of the working class mothers are presented as being very negative. Although they placed a high value on education, their negative disposition and lack of experience of maternal schooling inhibited providing support for their children's education (of the form provided by middle class mothers), even when they did have the time available to do so. Here working class mothers are presented as having high aspirations and as working hard to enhance the educational opportunities of their children, but to little avail given key differences in the nature of the cultural capital of middle class and working class mothers. Like the educational anthropologists whose work is discussed by Foley (1997), Reay is keen to make comparisons between middle class and working class practices in terms of differences in forms of cultural capital rather than class based accumulation/deficit.

These, and other, observations made by Reay are important and clearly add to our understanding of class differences in the modes of involvement of mothers' in their children's education. However, it seems questionable that sufficient attention has been paid to the translation of concepts drawn from Bourdieu's theorising into terms that can be applied to Reay's empirical data. The parameters of 'cultural capital' are ill defined and it is unclear, for instance, what statements such as 'Their cultural capital lacked the certainty and sense of entitlement of their middle class counterparts' (ibid., p. 58) might mean in relation to Bourdieu's conceptualisation of cultural capital. Reay claims to 'employ cultural capital and habitus as conceptual tools' in the exploration of 'the many different types of work mothers undertake in support of their children's education' (ibid., p.70). She claims that 'there was little difference across the sample in either the importance attached to education or the mental energy women devoted to their children's schooling' (ibid.). Despite this, the form of support provided by working class women was seen to be of less value in a number ways. Once again, precisely what counts as 'cultural capital' in this context, how it might be recognised and how it operates in the educational field is unclear.

In this sphere, and in her investigation of interactions between parents and teacher, of social networks and domestic routines and of the marginal involvement of fathers, Reay draws on her fieldwork, interviews and observations to make a number of illuminating observations, many of which challenge claims made by Lareau. As with Lareau's work, though, lack of clarity over the criteria for the recognition of cultural capital and specification of the characteristics of class related habitus place severe limitations on the forms of explanation offered. A number of references to the claim that the cultural capital of working class women who have moved from other countries to the UK 'is in the wrong currency' (ibid., pp. 59, 91, 111) also indicates a degree of uncertainty about the relationship between field and the valorisation of capital which further weakens her explanation. Reay could clearly have developed a conceptual

language for the description of her data or for the translation of the data into terms that are recognisable within Bourdieu's framework. She is, however, hampered in doing this by the use of high level concepts such as 'cultural capital' and 'habitus' in addressing her data and an apparent desire to refer back to Bourdieu in the discussion of her data (for example, she frequently inserts quotations from Bourdieu's work in the discussion of her fieldwork as if to validate the observations she is making by tying them back to general statements made by Bourdieu). Consequently, the form of the relationship between her data and her account cannot be specified. This, in turn makes it difficult for her to the specify the particular characteristics of class and 'race' differentiated cultural capital and 'habitus', and identify their effects within the educational field. Reay's work does, however, provide a valuable counter to the idealisation of family relations, the ungendered treatment of 'parental participation' and the homogenisation of mothering in the literature and research on home/school relations.

## 3.4 Vincent: parent-teacher relationships in inner-city UK primary schools

Vincent (1996) is concerned with the changing nature of home-school relations in the UK. In particular she sets out to explore the relationship between types of relationship between parents and teachers and the social, cultural and political contexts within which these are formed and elaborated. To this end, Vincent presents the outcomes of a two year empirical programme in which she investigated teacher-parent relations in five primary schools in one inner-city local education authority and events surrounding the establishment of a cross borough Parents' Centre. The data was collected largely in the form of in-depth interviews with parents, teachers and other key informants.

The analysis presented by Vincent focuses on the different status accorded to professionals and non-professionals within the education system. She identifies four

possible forms of engagement with schooling currently available to parents: as *supporter/learner*, as *consumer*, as *independent* or as *participant*. As supporter/learners, parents are encouraged to support the school in its work either by taking part in activities within the school or by carrying out school-type activities in the home. On the basis of her review of parental involvement initiatives of this kind, Vincent notes that not only are parents providing additional support for teachers but they are also the subjects of the pedagogic action of the school. Through taking part in school activities with their children, parents become familiar with the practices of the school and learn to evaluate their own pedagogic practices in relation to the teachers' representations of what is appropriate for parents to do and what is not. Whilst these forms of initiative provide a window for parents into the school, the prioritisation of professional knowledge allows little latitude for parents to question or influence school practice. Recent developments such as the accreditation of parents' work with children through formal further education programmes (see Bastiani, 1994) and the formalisation of partnership between parents and teachers through the use of home-school contracts (see Jones et al, 1992; Macbeth, 1984, 1995; Labour Party, 1991) do little to alter this situation. In all cases, Vincent argues, parents are required to assimilate the professional values and practices of teachers and thus existing power relations are maintained.

Viewing parents as consumers is presented as characteristic of 1980s and 90s Tory education policy. This position is exemplified by the Parents Charter (Department of Education and Science, 1991, revised 1994). Although embedding the notion of parents' rights in the consciousness of teachers and administrators is important, Vincent argues that Tory policy, in this respect, did nothing to support parents for whom communicating with teachers is difficult, nor did it address inequalities in parent teacher relationships. Existing power relations are once again maintained.

Becoming an independent parent, someone who either has an oppositional relationship with the school or little or no contact with the school, might be a deliberate

decision as the result of disillusionment with school or a product of difficulties in communicating with the school, as a result, for instance, of a lack of fluency in English. Independent parents might fall into conflict with the school or not engage with the school at all. Some might choose to participate in supplementary schooling rather than engage with formal schooling in its current state (see Tomlinson, 1984).

The fourth form of relationship with schooling offered by Vincent is parent as participant. Here Vincent has in mind formal democratic participation in decision making about education which passes well beyond the inclusion of parent governors on governing bodies. She is concerned that mechanisms are established, such as statutory Home School Associations (as proposed by Sallis, 1987, and Tomlinson, 1991) or class associations (as proposed by Macbeth, 1989, 1995, and Tomlinson, 1991) whereby 'opportunities for the exercise of individual and collective voice' (Vincent, 1996, p.58) are offered. Vincent acknowledges that whilst this form of level of participation has frequently been advocated, little has been achieved in practice. It is the supporter/learner relationship to schooling that predominates in the rhetoric of parental involvement in schooling.

In developing this framework, Vincent provides a detailed review of literature. On the basis of her review she argues that 'discussions around home-school issues are often perfunctory and superficial' (p.73). As evidence of this, she draws attention to three characteristics of literature on parental participation. Firstly, the predominance of consensual language and the tendency to present only positive aspects of parental involvement in education. She cites Wolfendale (1994) as an example of work that neglects the difficulties encountered by teachers attempting to foster parental involvement. Secondly, the almost universal assumption that there is a positive correlation between parental involvement and children's achievement, despite the lack of conclusive evidence. Thirdly, the susceptibility to trends, with new approaches frequently being vaunted as the way forward in developing closer home-school links.

Vincent also illustrates the normalising effect of the images of parenting presented in the literature and the neglect of social class, gender and ethnicity.

The four categories are useful in this respect but fail to provide an adequate basis for the analysis of her empirical data. Vincent presents the four categories as variously a classification of possible 'roles' (Vincent, 1996, p.43) on offer to parents and as 'ideal type models' (p.58), the accuracy of which can be tested 'against an analysis of lived parent-teacher relationships' (p.58). However, *parents as supporters/learners* and *parents as consumers* appear to be different ways of conceptualising existing forms of parent-school relationship developed from the review of literature, whereas *parents as independent* describes a particular state of the relationship of individual parents to the school. *Parents as participants* seems to represent the yet to be realised form of parent-school relationship through which Vincent's ideal of individual and collective parental empowerment can, she argues, be achieved.

The analysis of the interview material produces another typology of parental roles. The four categories are: *supportive*, *detached*, *independent* and *irresponsible*. Through the use of these categories and the presentation of selected quotations, Vincent illustrates the complexity of relations between parents and teachers and describes tensions between and within teacher and parent groups. She presents the catchment communities of her case study schools as fractured and fragmented. The *independents* constitute the largest group of parents in her sample. Although her sample is homogenous in terms of social class (predominantly working class), she claims that ethnic differences and differences in approach to schooling make it difficult for friendships and strategic alliances to develop. She observes that home-school initiatives are used teachers to attempt to increase the number of *supportive* parents. The projection of a particular image of an ideal 'good parent' by teachers acts, Vincent argues, to maintain the division between the professional teacher and the lay parent. The fragmented nature of catchment communities place parents in an individualised relationship with the school which

further weakens the possibility of challenging this perceived power and status differential. Vincent notes that none of the parents in her sample could be classified as *irresponsible*.

Although there are clearly problems in the design of the empirical work, the analysis of data and the form of presentation of results, Vincent's study is useful in that it provides a detailed overview of the field of parental involvement in schooling and begins to mount an empirical challenge to a range of assumptions made by practitioners and researchers. In particular it raises questions about the idealised image of parent-school relations, and possibilities for their transformation, evident in work associated with the IMPACT project. The conceptualisation of relations between teachers and parents in terms of structural power (drawing on Gramsci, 1971, and Giroux, 1983, 1994) draws attention to the importance of attending to the manner in which the dominance of one group over another is maintained. Vincent argues that through parental participation initiatives 'teachers are able to maintain a position as dominant 'partners' in their relationships with parents, especially working class parents' (Vincent, 1996, p.148).

In a subsequent piece of research, Vincent conducted four case studies of 'parent centred organisations' (Vincent & Warren, 1998, p.177). In discussion of one of these groups, a parent education group, Vincent & Warren outline the importance of a broadly Gramscian framework for their analysis (see also Vincent, 1997). They state that Gramsci's interest in the manner in which the values and beliefs of dominant groups gain hegemonic status

> necessitates looking at the processes by which hegemonic discourses are constructed, spread, received and interpreted. In particular, Gramsci emphasised the processes by which the 'spontaneous' or 'active' consent of the subaltern social groups is won to particular manifestations of the status quo, despite the social, cultural and political inequities embodied therein (Holub, 1992). In this view, professionals command a key role in this process, disseminating values and ideas, through 'their partial propounding of how things are and why' (Holub, 1992, p.24).' (Vincent & Warren, 1998, p.178)

In this particular study, Vincent & Warren explore the images of parenting produced and circulated within a course on parenting. Their data comprise fieldnotes taken by Vincent during the course and interviews with the course tutor and course participants. Through consideration of these they pursue the extent to which the course promotes the discourse of 'sensitive mothering' (as described by Walkerdine & Lucey, 1989) and the degree to which the women participating in the course appear to respond in a positive manner to a discourse which would appear to pathologise their own current practice. They also raise questions about the relationship between social class and the form of pedagogy adopted by the course tutor. They index the possibilities offered by Bernstein's discussion of the class basis of visible and invisible pedagogies, but do not develop this.

There is a close match between the observations made by Vincent & Warren and what we might expect from the form of Gramscian perspective described above. As with the earlier research, there is, however, an unclear relationship between the empirical data and the analytic statements made. The principles of selection that operate at all stages in the collection and analysis and the presentation of results are not made explicit. This limits the strength of the conclusions that can be drawn and the extent to which explanations can be offered. This is drawn into sharp relief by their consideration of the, somewhat unsurprising, hostile reaction of the course tutor to their description of the course. The lack of an explicit set of concepts, or language, with which translate the empirical data into terms recognisable within the general theoretical perspective being adopted by the researchers, renders the difference in perspective between themselves and the course tutor as an ideological conflict. The two perspectives are of a similar status, with no mechanism for relating the statements made back to the empirical data.

## 3.5 Ball: social class, gender and parental choice in the UK

The research by Ball and colleagues considered here took place within the context of a funded research project into market forces in education. The part of this work of particular interest in relation to my own research is that which addresses social class differences in choice of secondary school. This is based on '70 in-depth, loosely-structured interviews with parents of year 6 children in the throes of choosing a secondary school' (Ball et al, 1995, p. 52). The interviews were carried out in late 1991 and early 1992. On the basis of information on occupation, housing and education, the parents are categorised as either working class or middle class. The few families that could not be equivocally classified in this way were excluded from the class related analysis of the interview data.

In the initial analysis of interview data (as reported by Ball, Bowe & Gewirtz, 1995), two groups of parents are identified on the basis of the manner in which they engage with the process of selecting a secondary school: 'cosmopolitans' and 'locals'. In the selection of a secondary school, the cosmopolitan choosers participate in the education market place in a strategic fashion, using their knowledge of the secondary schooling within and beyond the immediate locality to select a school which best matches the requirements of a projected educational and occupational career for their child. The local choosers, in contrast, deliberately select their neighbourhood school, placing more immediate concerns about domestic organisation, physical proximity and child preference over and above long term considerations. Their relationship to the possibilities offered by the schooling system are 'accommodative rather than strategic' (ibid., p.75).

Within the sample, the cosmopolitans are predominantly middle class and the locals predominantly working class. The researchers note that, although there are a small number of exceptions, the relationship between social class and orientations to choice,

described in this way, are strong. From analysis of the interview material it is argued that not only are the processes and outcomes of school choice related to social class but that, in making a choice, working class and middle class parents are engaged in distinctly different forms of activity which in turn functions differently in the (re)production of class culture and thus social position.

The argument pivots around the identification of two distinctly different orientations to schooling, realised in this research as differences in the form of description and rationalisation of school choice given by parents in an interview situation. In their accounts, the cosmopolitan choosers make fine distinctions between types of schools (for instance, between neighbourhood comprehensives which draw students predominantly from the immediate locality and those schools which, through the operation of selection criteria, compete with each other to draw a more exclusive intake from a more widely dispersed geographical area) and within school types (for instance, between ostensibly similar schools on the basis of reputation, school ethos or examination results). Illustrative quotations are given to demonstrate that middle class parents are drawing on detailed knowledge of the system and professional or quasi-professional knowledge of pedagogic practices, acquired from a variety of sources. In weighing up the advantages of one school over another, some parents were able, for example, to make fine distinctions about the approach taken to specific areas of the curriculum by particular schools. This knowledge and ability to 'read' and differentiate between schools is seen as being combined with knowledge of how to engage effectively with the school and interact with teachers. The cosmopolitan choosers are thus presented as sympathetic to the goals of school choice and adept with respect to the means.

In contrast, the local choosers are presented as being more concerned with 'getting by' than with the realisation of longer term goals. Educational arrangements are seen as being subordinated to the demands of work and domestic organisation. Thus the

working class respondents express concerns about the ease of getting to and from school and how this relates to existing patterns of domestic organisation. They also place greater emphasis on the preferences of the child in making a decision. The domestic and work arrangements, and related social networks, of working class families are, it is argued, closely tied into the locale and immediate community. An orientation to the local is, it is suggested, a general characteristic of working class culture.

Thus, whilst middle class parents are presented as operating with a greater knowledge base, the key difference between the middle class cosmopolitans and the working class locals is that they are, in choosing a secondary school, engaged in distinctively different activities with distinctively different ends and distinctively different means. Middle class and working class parents are, in other words, operating in different 'landscapes of choice' (Bowe, Gewirtz & Ball, 1994). As Ball, Bowe & Gewirtz state:

> the market is strongly related to social class differences. There are two distinct discourses of choice in evidence. A working class discourse dominated by the practical and immediate and a middle class discourse dominated by the ideal and the advantageous (Ball, Bowe, & Gewirtz, 1995, p.74)

In interpreting the outcomes of their empirical studies, Ball and colleagues draw on the ideas drawn from Bourdieu in order to develop 'the beginnings of a sociological analysis of parental choice' (ibid., p.76). The manner in which concepts drawn from Bourdieu's work are incorporated into the analysis of parental choice is consistent with Ball's claim that 'what we need in policy analysis is a toolbox of diverse concepts and theories' (Ball, 1994, p.14) and his desire 'to replace the modernist theoretical project of abstract parsimony with a somewhat more post-modernist one of localized complexity' (ibid.). 'Cultural capital', for instance, is a key concept in explaining the different orientations to choice and differences in the processes by which school choices

are made by middle class 'cosmopolitans' and working class 'locals'. The knowledge that middle class parents have of the reputations and practices of schools, drawn from a wide range of sources, for instance, is seen as part of the cultural capital available to them to invest 'for a return of educational capital' (Ball, Bowe & Gewirtz, 1995, p.76). In their initial exploration of school choice, Ball, Bowe & Gewirtz (1995) focus very much on the strategies and orientations of the middle class cosmopolitans (there are, for instance, 44 quotes from 11 middle class respondents in this paper compared with 12 quotes from 5 working class respondents). With reference to Bourdieu, they present the strategies and orientations of the working class locals as dominated by pragmatic accommodation to everyday demands of family and work and the constraints of their social, cultural and economic conditions. They state that

> There are two distinct discourses of choice in evidence. A working class discourse dominated by the practical and the immediate and a middle class discourse dominated by the ideal and the advantageous. (ibid., p.74)

Latterly, Reay & Ball (1997, 1998) have focused more specifically on the orientation of working class parents towards school choice, the strategies they use and the consequences of the adoption of these strategies. These papers are the result of a further analysis of '137 ethnographic interviews conducted with parents involved in the processes of 'choosing' a secondary school for their child' (Reay & Ball, 1997, p.99). It is clear from this work that Reay & Ball are engaged in a struggle to establish the significance of social class in understanding social (re)production at a time when many commentators question its relevance. The pity is that they pay little attention to the basis of their own social class categorisation, and thus weaken the conceptual basis for the conclusions they draw from their empirical work. They state that:

> While we employ working class in a fairly crude and all-embracing way here we do not wish to deny either the complex and shifting nature of social class in 1990s Britain or the many different factions which comprise the working classes. (ibid., p.89)

By not dealing explicitly with the manner in which individuals are placed in a particular social class category, with the nature of the factions they identify within social classes, with the various schemes in current use for classification by social class nor with the grounds for their own selection of a particular approach to classification, a degree of circularity is introduced into their argument. Working class parents are described in terms of their orientations towards schooling, but what it means to be classified as working class is not explicated. As a result, Reay & Ball can, for example, describe the working class parents as having an orientation towards 'community and locality' (ibid., p.99) and can demonstrate how this operates with respect to school selection, but cannot account for how this orientation is acquired and comes to be a characteristic of the working classes. Reference to Bourdieu (e.g. ibid., p.91, p.93, p. 94; Reay & Ball, 1998, p.439) in proposing explanations, focuses attention on dimensions of difference in orientation between dominant and dominated groups, rather than the precise nature of the orientation (which, in Bourdieu's schema, would be considered to be arbitrary). As in Bourdieu's own work, the indexing of 'the *necessities* of working-class cultures, where many members lack the resources to compete in the marketplace' (Reay & Ball, 1997, p.99, emphasis added) lies in tension with this position. Clearly, the suggestion is that working class parents are involved in a 'game' not of their making and which is played out in contexts in which they feel ill at ease. Whilst the cultural characteristics and dispositions of the dominant middle classes are viewed as arbitrary, the 'objective' conditions of the dominated working classes place them in a position of relative disadvantage, perceived in terms of 'lack' from the dominant position. We can attempt to describe the 'game' played by the working classes and mark out its logic, but ultimately, in terms of the social and economic rewards sought by the dominant group, it is the 'wrong' game. This also raises the question as to whether working class parents have a 'game' and a related set of strategies in the sense that these are used in description of the actions and motivations of middle class

parents. Bourdieu's relational social theorising does not, in this context, appear to provide the conceptual apparatus for Reay & Ball to 'problematise conceptions of meritocracy and social mobility, to deconstruct notions of educational failure and success and, concomitantly, middle-class practices' (ibid.). It ultimately does not allow Reay & Ball into the spaces they wish to explore.

In their most recent paper, Reay & Ball (1998) take a different tack. The basis on which families are allocated to social class categories is made more explicit and data regarding mothers' and fathers' occupations, educational background and housing is provided. The focus of the analysis is 'family dynamics' in school choice. Family dynamics are described in terms of Bernstein's distinction between positional and person-oriented family types. This move clearly enables description and analysis of relations within families with respect to the processes of school choice. The form of these relations can consequently be interrogated in relation to the social class position of the family. As with the earlier papers, the discussion opens up a number of fruitful pathways for the understanding of the relationship between social class and schooling. There is, however, a serious problem with respect to a lack of match between the form of the data and the conceptual framework being deployed. Reay & Ball seek to describe families in terms of two distinct types of intra-family interactional mode. Their data are in the form of parental accounts of the process of school choice. They thus have to infer intra-family interactional orientations from post-hoc adult accounts what they did and how they did it. They state that:

> While the majority of middle-class families in our sample exhibited personal modes of interaction and the working-class families adopted mainly positional styles of interaction, there was no correspondence between social class and family type. (ibid., p.431)

They do not, however, have any data on forms of interaction within families, unless they assert that an account of events given by a parent in an interview can be taken at face value and thus stand as a proxy for observational data on interaction between

parents and children. This is hardly plausible. An alternative would be to focus on the *form* of the accounts given by parents (rather than the substantive content) and infer from this the mode of orientation of the parents to intra-family interaction. To do this would require a coding scheme by which units of the interview data can be recognised and described in terms which relate to the forms of orientation being explored (in other words, the development of a system of indicators which is articulated with a system of concepts). This is the approach taken, for instance, by Bernstein and colleagues in the exploration of the relationship between social class and orientations to control, through the analysis of mothers' verbal responses to a number of hypothetical control situations (see Bernstein & Cook-Gumperz, 1973). Whilst Reay & Ball state that the analysis of their data took the form of 'Straussian coding' (ibid., p.431), no description is given of the codes developed, the criteria for allocation to codes or the relationship between codes. Consequently, the relationship between the data and the analytic statements made remains unclear.

This paper by Reay & Ball is clearly exploratory in nature. It opens up a number of avenues for investigation with respect to the relationship between social class, family dynamics, orientations to schooling and school choice. I would argue, however, that in order to develop this work, Ball and colleagues have exhausted their existing data set and need to conduct further empirical investigation in which there is a clear relationship between design and conceptual development, which builds constructively on their earlier work.

Like Lareau's and Reay's work, research by Ball & colleagues makes a distinct contribution to the development of a detailed description of the differences between working class and middle class parents in their engagement with schooling. We gain a clearer picture of the factors at play in making educational decisions and the manner in which these decisions operate differentially within what appear to be specifically class related life projects or trajectories. It is thus not that better or worse decisions are made

in terms of the achievement of particular shared sets of goals, but that dramatically different sets of goals provide dramatically different contexts within which decisions are made. There are distinct elements of this work that relate to my own research. The importance of the relative social position of parents and teachers in shaping relations between home and school is one such area (discussed by Reay & Ball, 1997; see also Brown, 1985, 1990, 1993).

## 3.6 David: mothers and schooling in the UK

The studies discussed thus far have all paid some attention to gender as one social factor amongst many which play a part in shaping relations between home and school. For David and colleagues, gender is the predominant interest. David is particularly concerned with the social construction of mothers in and through educational policies and practices and with the experiences of mothers engaging with educational institutions. With respect to recent shifts in policy and practice concerning the relationship between parents and schooling, David and colleagues rightly stress that it is predominantly mothers, rather than fathers, who take domestic responsibility for the day to day care and development of their children and it is they who are most likely to participate actively in the schooling of their children (see, for instance, David et al, 1993). They contrast the gendered nature of dominant forms of domestic division of labour with the ungendered language of 'parental participation'.

David's work predominantly takes the form of policy analysis (see, for instance, David, 1980, 1985, 1993a, 1993b, 1997). In reviewing research and development in the areas of parental involvement in education and home-school relations, David (1993b) notes that there has been a shift over time in the relationship between professional educators and parents/families and 'an *increased* emphasis on the role of *mothers* as key educators, both at home and at school' (ibid., p.33, emphasis in

original). This has occurred alongside shifts in dominant modes of family organisation and in patterns of maternal employment. She states that systems of formal schooling in the West have been built upon

> the assumption of a the need for professional educators—the teachers—as opposed to 'amateur' mothers. Mothers, however, were assumed to be available to support children in their transition to, and involvement in, schooling. (ibid., p.38)

This assumed distribution of skills and responsibilities legitimises a division of pedagogic labour between mothers and teachers. To understand changes in the expectations and practices of parental involvement and their effects, the empirical work carried out by David and colleagues focuses on the nature of the 'boundary' between the private world of the home/family and the public world of the school and between the 'professional' teacher and the 'amateur' mother. Ribbens (1993a), for instance, has studied mothers' and children's experiences at the point of entry into full-time, formal schooling. This moment, for Ribbens, marks a dramatic change in maternal responsibilities; it is, she argues

> likely to be experienced by most mothers as the first point at which they significantly lose the control of their child's care, and are *obliged* to hand over their maternal authority to another adult—generally another female. (ibid., p.88)

Through interviews with 24 'white women … all living in middle income, privately owned houses in the south-east of England' (ibid., p.61), Ribbens explores experiences of this shift in mother-child responsibility. Ribbens' account gives some flavour of the priorities of this group of women in the selection of a primary school for their child and the tensions they experience in the transfer of 'maternal authority' to the school. Whilst there are clearly variations in the perspectives and experiences of the women in Ribbens' sample, it is not possible, from her account, to explore these variations in terms of social class. Reference is made to the description of the transition to full-time

schooling in terms the establishment, and crossing, of geographical, temporal and social boundaries, but these concepts are not developed.

As a development of this study, Ribbens (1993b) explores the 'expressive sense of family-school boundary' (ibid., p.91) of a sub-sample of six of these mothers in the early years of their children's compulsory schooling. Boundary is used here in the sense of 'those boundaries to which people actually make reference and which are meaningful to them in their everyday lives' (Morgan, 1985, p.153, quoted in Ribbens, 1993b, p.91). Ribbens presents her six case studies as exemplifying different forms of relationship between mother and school. In particular, she addresses the extent to which mothers expect there to be continuity between home and school and the degree to which mothers defer to professional discourse on the educational needs of their children.

Ribbens describes the boundaries between family and school as 'semi-permeable' (ibid., p.114). By this she means that boundaries can both vary in strength and effect and directionality of effect. The family-school boundaries are experienced differently by the members of her sample. Additionally, school practices, children's experience of schooling and mothers' interactions with teachers can affect family-life in a number of ways (e.g. the regulation of aspects of domestic activity by the school timetable and calendar) and vice versa (e.g. mothers can attempt to use their maternal authority to affect the school life of their children). Homework is presented as one way in which the school can influence domestic practice and affect the relationship between mother and child. It is also a means by which information can pass from school to home and home to school. Some mothers within her sample also attempted, in different ways, to influence practices within the school, particularly with respect to the experience of their own children. Again, the nature of the sample does not allow social class variation to be explored. It has to be said that the notion of boundary is underdeveloped in this work. How the boundary is constituted and the social dynamics and effects of the proposed variations in the strength of boundary are not explored. It is also not clear how the

general statements made about home-school relations relate to the empirical work carried out. The results of the empirical work are presented in the form of narratives and selective quotations which are substantiated by reference to other research and writing in the field.

In their empirical study of secondary school choice, David, West & Ribbens (1994) attempt to explore the process of educational decision-making 'in terms of the gendered nature of parenthood' (ibid., p.130). Using questionnaires and interviews they studied the manner in which 70 families in inner London approach the selection of a secondary school for their Year 6 children. Their findings with respect to comparison of the part played by mothers and fathers in the decision making process are ambiguous. They state that their 'interviewees where predominantly women' (ibid., p.131) and that their 'sample is not representative of the socio-economic characteristics of the families in the two London boroughs from which they were drawn' (ibid., p.130). The results of the study are presented largely in terms of the complexity of the process of ungendered 'parental' decision making. They do state, however, that, with respect to secondary school choice '*mothers* are almost invariably involved in those processes and procedures whatever the kind of family and child ... On the other hand, fathers are *not* invariably involved' (ibid., p.130, emphasis in original). One of the factors they identify as possibly being of importance in the process of school choice is parents' own experience of schooling. This, as with the other factors they discuss, is presented in terms of diversity and complexity. As the following quote illustrates, this difficulty has its roots in the design of the empirical work, the lack of an adequate conceptualisation of the social factors which they wish to incorporate into their discussion and the lack of an explicit analytic framework.

> What was most interesting to us was the fact that parents' different experiences in their own education, and in their present situations and political orientations, had such diverse effects upon school choices and general views of schooling. In other words, although our sample of families tended to be rather 'mainstream' and to exclude the semi-skilled, unskilled and other

> disaffected and marginal groups, nevertheless there was an enormous variety and diversity of approaches to these issues of educational decision-making. This partly leads us to the conclusion that the issues themselves are so intricately interwoven with people's other social issues and their lives in general that there is no easy summary of how the process of school choice can be approached. (ibid., p.139)

In a more recent study, West et al (1997, cited in David, 1997) have studied both school choice and forms of parental involvement. They claim that there are clear differences in the modes of engagement of fathers and mothers in school related activities in the home. It is stated, for instance, that 'we found that, whatever the family circumstances, fathers rarely helped at home with literacy activities, leaving it all to mothers, who were nearly always involved' (David, 1997, p.4). The results of this study with respect to parental involvement in schooling are presented in greater detail by West et al (1998). Whilst it is difficult to classify this research as sociological (its appears to relate principally to those studies, such as Hughes, Wikely & Nash (1994) and Varlaam et al (1985), which seek to report, rather than explain, patterns of parental involvement at a given point in time), it does raise a number of issues that are relevant to my own research. As with the earlier work discussed above there are, however, serious flaws in both the design of the research and the presentation of results.

The study is based on interviews with the parents of 107 Year 6 children from 19 primary schools in London. Three of the schools were private preparatory schools (24 of the children attended these), the other 16 schools were state primary schools (the remaining 83 children in the sample attended these). The sample was constructed by asking the headteacher of each school to identify 6 girls and 6 boys who represent the social and academic profile of the school. Of the 228 parents approached, 107 agreed to take part in the study. As West et al admit, these parents have chosen to opt-in to the study and 'it is likely that parents who had an interest in the education of their children were more inclined to respond' (ibid., p.467). By adopting this sampling strategy they have also compromised their attempt to produce a sample that is representative of the

profiles of the participating schools. This is clear from the occupational profile of the sample—only 7 of the 107 parents are classified as having partly skilled manual or unskilled occupations. As with the earlier study, the sample was skewed towards professionals, managers and those in skilled occupations.

Also in common with the earlier study, social class is treated in an idiosyncratic fashion. Surprisingly, the social class of a family unit is determined by the occupation of the father, as classified according to the Standard Occupational Classification (Office of Population Censuses and Surveys, 1990), even when the father is absent. Only the occupational group of natural parents is taken into account. The occupational group of the mother is only taken into account if she is a single parent. In their discussion, West et al also appear to be treating the occupational categories as social classes in themselves, rather than treating membership of a particular occupational group as an indicator of social class. They state, for instance, that their sample contained 'few families in partly skilled and unskilled *social classes*' (ibid., p.481, emphasis added). Given all this, and the skewed nature of their sample, it is not surprising that they found that there was a 'stronger association between involvement in children's education and mothers' highest qualifications than with social class' (ibid., p.482). Mothers' educational qualifications could, of course, be incorporated into the criteria for social class categorisation. It would appear, however, that, counter to contemporary practice in class analysis (see Compton, 1993, pp. 109-137, for a discussion of sociological debates around alternative social class classification), no attempt has been made to develop a classification scheme that is appropriate for the form of research being carried out.

West et al present their research in purely empiricist terms. No theoretical or conceptual motivation is provided for the associations being explored. Each possible association between variables (for instance, between school type, expressed as either state or private, and use of workbooks by parents, expressed as yes or no) is presented

in terms of the statistical significance (or otherwise) of the association, established by the conduct of a chi-squared test (a test of the independence of populations) on a bi-variate table of values. Each statistically significant association is presented as an empirical fact. There is no articulation of these with any explicit and coherent interpretative framework or set of analytic concepts. Explanations offered for particular associations are often of the form 'this seems to be because …' (ibid., p.480) or 'it seems likely that …' (ibid., p.477). Social class is not treated seriously as it appears not play a part in the implicit interpretative framework of the researchers. West et al stop short of suggesting that mothers' level of educational qualification be used in the place of social class categories, although they do state that 'not only is the mother's educational level more strongly associated with a range of forms of involvement but that its consistency over time and the ease of coding offers clear advantages over categorising children according to social class' (ibid., p.482). This of course elides the question of exactly what 'mother's level of qualification' means in terms of explaining phenomena associated with differences in forms of engagement with the school and differences in children's attainment in school. It also obscures the possible interaction between social class position and effects of level of qualification. Given the importance of what I have termed the 'pedagogic biography' of parents for their orientation to schooling, I would clearly support their suggestion that 'researchers examine educational differences relating to mothers' educational level alongside social class analyses in order to understand further the importance of this factor' (ibid.).

David and colleagues provide a strong commentary on contemporary developments in educational policy and practice and highlight the need to address the gendered nature of parental participation. The stress placed on the exploration of the relationship between the level of educational qualification of mothers, their educational biographies and the manner in which they engage with activities with their children is important for the development of a better understanding of home-school relations. These issues are

taken up in my own empirical work. As the discussion above illustrates, however, only tentative conclusions can be drawn from the empirical work carried out by David and colleagues. Although interesting issues area raised in the policy analysis, we must be cautious with respect to the extent that their empirical work can contribute to our understanding of the relationship between social class and parental involvement in schooling given flaws in the design of the work, the lack of conceptual clarity and development, and the idiosyncratic way in which social class is treated.

## 3.7 A critical discussion of Bourdieu's cultural reproduction theory

Given the extent to which Bourdieu's theory of cultural reproduction has influenced the forms of explanation offered in work discussed above, and the critical comments I have made about this aspect of the work, it is important to give some more detailed attention to this. As Foley (1997) demonstrates, in his consideration of the response of researchers and practitioners to the recent resurgence of 'deficit thinking' (see Valencia, 1977), a major attraction of Bourdieu's position is its treatment of cultural 'content' as arbitrary. This allows one to assert, for example, that the practices of dominant social groups are not essentially, in any sense, superior to those of other groups, but rather that they are different and, within schooling in this case, privileged. The adoption of such a position, however, imposes limitations on empirical researchers. As Bernstein has observed, the underlying assumptions and focus of general theories of cultural reproduction such as Bourdieu's limit their capacity to produce strong principles for the description of pedagogic agencies, discourses and practices (see Bernstein, 1990, 1996). Education is seen as 'a carrier of power relations external to education' (Bernstein, 1996, p.18) but internal analysis of precisely how the structure of

pedagogic discourse comes to relay external power relations and patterns of dominance is neglected.

Bourdieu builds on Durkheim's distinction between the non-arbitrary nature of representation in the profane world and the arbitrary conceptual structures and relations of the sacred. The latter is associated with the written forms of specialised knowledge, characteristic of modern societies with a complex division of labour, in contrast to the former which is associated with largely oral, everyday knowledges and practices. This distinction is commonly made and is clearly present in the IMPACT literature. The project directors, for instance, frequently contrast the strategies and knowledge developed by parents through their direct and immediate experience with their children in domestic contexts with the more abstract and generalised strategies and knowledge of the teacher, in which experience is mediated by a variety of academic and professional discourses. The 'unmediated' strategies and knowledge of parents are often presented, either explicitly or implicitly, as somehow more authentic than the those of the teachers, which are presented as artefactual and tainted by the character of the professional field within which they operate.

For Bourdieu, the operation of the field disguises the arbitrary nature of the content of the field (and thus the arbitrary nature of the legitimation of positions within the field). The priority for the sociologist is to demonstrate how the field reproduces itself irrespective of its precise content and of the structuring of the content. Bernstein (1996), in contrast, draws attention to the possibility that the internal structure of the content of the field (which constitutes the symbolic system of the field) might itself interact with the structure of the field to affect, in fundamental ways, the operation of the field. He focuses on the social relations that optimise particular forms of discourse. Bernstein distinguishes between two forms of discourse: *horizontal* (associated with everyday, oral or common-sense knowledges) and *vertical* (associated with specialised,

most often written knowledges). This distinction, and how it relates to my own study, is explored in Section 6.6.4.

Bernstein is able to demonstrate that whilst there are distinct differences between horizontal and vertical discourse, both have an arbitrary base and both can be described in terms of the role of distributive rules which regulate the relationship between potential and actual practice. In doing this he produces the basis for an analysis that combines consideration of the structure of the symbolic system (discourse) and field. This challenges Bourdieu's exclusive focus on the field and his theoretical negation of the possibility of an interaction between the symbolic system and the field. With respect to the deficit or difference debate, Bernstein's approach, in contrast to Bourdieu's position, allows us to address directly and explicitly the internal characteristics of schooling, as well as its external relations, and to begin to examine, and explain, how and why particular groups are educationally advantaged or disadvantaged in and through specific educational practices. From Bernstein's perspective, it is the absence of an adequate theory of pedagogic discourse and its relation to practice that leaves open the space for the ideologisation of difference as deficit. To move productively away from the seemingly inevitable, and irresolvable, deficit or difference debate requires systematic attention to the internal characteristics of schooling, rather than merely treating schooling as a relay for power relations external to it. For my own empirical study, this discussion highlights the importance of attending to the structure of discourses and the forms of social relations that optimise particular forms of discourse. In particular it highlights the need to look at the degree of localisation or generalisation of practices within the home and the school and the forms of social relations within which they are realised.

Given the current influence of Bourdieu's work on recent sociological research into relations between parents/home and teachers/school noted above, it is important to pay some critical attention to Bourdieu's theorising and its appropriation by other

researchers. For Bourdieu, the primary legitimate object of sociological analysis is the *field*. The notion of field is one of a number of 'open' or 'systemic' concepts which lie at the heart of Bourdieu's social theory (the other principal concepts being *practice, habitus* and *capital*) . Bourdieu resists definition of these concepts as he views them as relational, that is as only being definable within a system of relations rather than having ascribed to them specific and fixed meanings. These concepts 'are designed to be *put to work empirically in systematic fashion*' (Bourdieu & Wacquant, 1992, p.96, emphasis in original). Thus, whilst Bourdieu might define a field, in analytic terms, 'as a network, or a configuration, of objective relations between positions' (ibid., p.97) or might use the analogy of a 'game' to help develop an initial understanding of the concept and how it relates to other key concepts, there can be no *a priori* statement of what constitutes a field nor where its limits might lie. In any given case 'the boundaries of the field can only be determined by an empirical investigation' (ibid., p.100). Bourdieu's own studies include work on the intellectual and artistic field, the religious field, the scientific field and the judicial field (see Bourdieu & Wacquant, 1992, pp.94-5, for references to relevant work by Bourdieu and by his colleagues at the Centre for European Sociology). In each case it is the field itself that is object of study. In educational studies which deploy concepts such as cultural capital and habitus in their descriptions, it is rarely made clear what field is being constituted as the object of study nor how it is recognised and where its boundaries lie.

The relational nature of Bourdieu's theorising mirrors his image of the social world. Fields constitute relatively autonomous social spaces in which agents invest, compete for and acquire various forms of capital (economic, social or cultural). Through improvisatory and strategic practice, elaborated in the struggle for ascendancy, human agents are distinguished from each other and positioned within the field. The relationship between domination within the field and forms of capital, and between forms of capital within the field, are dependent on the characteristics of the field. The

characteristics of the field are both (re)produced in the practices of human agents and act to ascribe value and meaning to these practices. Social practice is neither the direct result of individual rational decision making nor determined by higher order structures. The social actions and practices of agents are founded in, but, by virtue of the strategic, contingent and improvisatory nature of practice, not determined by, their habitus. Habitus, in Bourdieu's formulation, mediates between the subjective world of the individual and, in his terms, the objective relations of social/cultural world within which they operate (fields). Through experience, that is through engagement in social practice, the individual acquires particular dispositions and generative schemes. These dispositions and schemes are not abstract but are embodied in individual human agents and are an integral part of how they interact with each other and with the environment. Habitus is thus, as with other elements in Bourdieu's conception of the social, both a *product* and *producer* of other elements: he states, for example, 'practice is the product of a habitus that is itself the product of the embodiment of the immanent regularities and tendencies of the world' (ibid., p.138).

The brief description given above serves to illustrate the relational nature of Bourdieu's conceptual language *and* of his image of the social world. My intention here is not to provide a comprehensive account of Bourdieu's position. What I wish to demonstrate is that, whilst there appears to be great potential in Bourdieu's work for the development of an understanding of the relationship between domestic practices and formal schooling, the nature of Bourdieu's theorising produces a number of problems, particularly for those involved in empirical research into the relationship between parents/homes and teachers/schools.

The relational nature of Bourdieu's conceptual language and the high level of generality of his theorising, whilst accounted for in his conceptualisation of the relationship between his social theory and his own, and colleagues', empirical work, produce difficulties for researchers attracted by, for instance, the apparently non-

deterministic nature of his description of the social. Clearly, neither the educational anthropologists and sociologists referred to by Foley (1997) nor the researchers whose work is reviewed above are engaged in the advancement of Bourdieu's theoretical or empirical project. Their appropriation of concepts from Bourdieu's theorising (or, for that matter, analytical techniques from his empirical work) removes these concepts from the relational system in which they acquire meaning and, through their recontextualisation within another system of terms, ascribes them new meanings. There will clearly be variation in the coherence and scope of the systems into which the concepts are imported, resulting in a variation in the theoretical and analytic productivity of this recontextualisation.

Drawing inspiration from the work of others and the analytic deployment of concepts in new and novel contexts are both potentially productive. The problem here is, however, that substantial work has to be done to translate the conceptual terms into criteria for the identification of relevant contexts for empirical investigation and to produce a language for description. For instance, as has been seen from the discussion of Lareau's and Reay's work above, the concept of cultural capital is frequently invoked in the description of the attributes and practices of particular social class groups, without clear indication of how such forms of capital might be recognised and valorised. Similarly, reference is made to differences in habitus in attempts to describe differences in the practices of different groups of people (in, for instance, Reay's (1995) discussion of 'gendered habituses' and differences in the relationships and behaviours of boys and girls within a primary school). As Bernstein (1996, p.136) points out, Bourdieu recognises habitus only in terms of its effects, i.e. we can postulate differences in habitus on the basis of the empirical identification of differences in orientation that they produce. What Bourdieu cannot do, and would not wish to do given his assertion of the arbitrary basis of specific cultural differences, is to describe the features of a given habitus, how these came to be, how they are acquired and so on. For a researcher to

draw on presumed differences in habitus to explain empirical differences in, say, children's behaviour, achieves little unless we can recognise and describe the processes by which habitus is specialised and internally differentiated. This is clearly not Bourdieu's interest. Furthermore, these researchers are inevitably engaged a form of highly localised and atomistic social research to which Bourdieu's form of social theory is a reaction (see Jenkins, 1992).

Whilst invoking Bourdieu's social theory might, at very least, appear to provide a theoretical safety net for a researcher, this clearly has its own dangers. Pearl (1997) argues that through their theoretical affiliation to Bourdieu, some researchers, who stress cultural differences in explaining differential educational attainment, fail to escape 'deficit theory' accusations. Although improvisation and contingency at the level of practice are highlighted, the dispositions of agents appear to be determined by their habitus and thus by their early life experiences. Thus, fluidity and improvisation at the level of practice are rendered irrelevant by the ultimate reproduction of structural relations in which the production of class-based orientations is a key component (see also J. Alexander, 1995, who explores further the claim that Bourdieu's social theory is ultimately deterministic in nature). For Pearl, Bourdieu ultimately bolsters the forms of theories of cultural and accumulated deficit that Foley (1997) and others are attempting to combat[2].

## 3.8 Conclusion

All the studies discussed above highlight differences in the orientations and practices of parents differentiated in terms of social class and/or gender. The descriptions provided

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[2] Foley's account of Bourdieu's position has clearly changed over time. In an earlier paper he celebrates the work of Paul Willis (see Willis, 1977) saying that he 'rescues class analysis from the structural determinism of 'reproduction theorists' such as Bowles and Gintis (1976) and Bourdieu and Passeron (1977)' (Foley, 1989, p.138).

help to sensitise us to the manner in which school practices, whether it be those associated with school choice or with forms of parental participation in the classroom, can act to differentiate between parents and advantage some whilst disadvantaging others. We cannot, of course, attempt to bring this work together as a unified and coherent body of sociological knowledge about parental involvement in schooling. There are distinct differences in the theoretical and methodological approaches being adopted. David and colleagues are principally concerned with the exploration of the differentiating effects of educational and social policy. Whilst reference is made to background theory, the development of a more general description of relations between parents/families and teachers/schools with respect to the (re)production of social relations in and through schooling is not a priority. The work raises important questions about the centrality of the educational biographies of mothers in understanding relations between home and school. Vincent attempts to describe specific events (such as the establishment of a parents centre or the operation of a parent centred organisation) in terms of a more general understanding of the nature of civil society and the position of professionals in the reproduction of patterns of dominance and subordination. Lareau views her empirical work as ethnographic in nature and looks to Bourdieu for specific analytic concepts located within a more general theoretical framework. Ball and colleagues draw on a corpus of 'ethnographic interviews' (Reay & Ball, 1997, p.99). They also index more general concerns and endeavour to develop explanations which draw on Bourdieu's social theory, but in a more eclectic manner, deploying concepts drawn from a range of social theorists such as Basil Bernstein, Michel Foucault, Anthony Giddens, Erving Goffman, David Harvey and Doreen Massey.

Whilst all this work clearly contributes to our sociological understanding of parental participation and of home/school relations, there are, as would be expected, clear absences in the research discussed above. For instance, none include observational data on interactions between parents and teachers. Similarly, whilst all the studies are

concerned, ultimately, with the effects of parental participation in schooling on the educational careers and experiences of children, only in Lareau's most recent work (see Lareau & Shumar, 1996) are observations made of parents and children working together. None of the research discussed addresses empirically the perspectives of children or their experiences at home and in school. These absences certainly mark fruitful avenues for future sociological work and index areas of existing sociological research which may be relevant to our developing understanding of parental participation in schooling. Pollard has, for example, consistently addressed the manner in which children make sense of and engage with primary schooling and the process of negotiation between children and teachers in the school setting (see, for instance, Pollard, 1985). More recently, with a sharper focus on children's learning, Pollard has sought to explore the manner in which different home and school contexts act to support young children (Pollard, 1996). The focus of this work is manifestly on the child. Through a number of case studies, constructed from observations at home and in school and interviews with children, parents and teachers, Pollard maps the child's emerging sense of identity and the relationship between this and learning in home and school contexts. The nature of Pollard's sampling in this study precludes exploration of social class differences (the ten case study children all went to a single school 'serving a middle class community' (ibid., p.xii)). Nonetheless, this work indicates productive ways forward for a sociological understanding of home/school relations which passes beyond the perspectives of parents and teachers alone.

Like the most of the research discussed in this chapter, my own empirical work draws on interviews with adults (parents and teachers). In addition it draws on documents produced by schools for parents and entries made by parents in IMPACT diaries. The research is distinctive in its focus on the manner in which parents are positioned in relation to the practices of the school and, in particular, social class differences in access to the principles of realisation of IMPACT tasks and the criteria for

their evaluation. In addition, the research is distinctive in the manner in which the relationship between empirical data and general statements is conceived. In the next Chapter, I will (i) discuss the methodological position being taken, in relation to the above discussion of other work in the field; (ii) outline my empirical programme and describe the manner in which this is presented in the subsequent chapters of the thesis.

# Chapter 4 Introduction to the empirical studies

## 4.1 The relationship between theory and empirical data

One of the issues raised in the discussion of research in this chapter is the nature of the relationship between the analytic categories produced by the researchers, their empirical data and the concepts and theoretical structures on which they draw. This is a key component of recent debates about the presentation and evaluation of qualitative research in the sociology of education. Foster et al (1996), for example, address the manner in which qualitative research is conducted and reported and raise questions about the generalisability of much of this work. They argue that there are a number of common weaknesses in the reporting qualitative research which act to undermine or weaken the claims made by researchers. Amongst these is the tendency for researchers who have produced categories for sorting and describing their data, which are often then used in the production of both localised accounts and general statements, to present extracts of data to exemplify the categories they are using in preference to making a clear statement of the criteria for the placement of, for instance, particular kinds of utterance into a particular category. The selective use of exemplary quotation in this way immediately raises questions about the criteria for selection.

Tooley (1997) has drawn on the work of Foster et al in the production of a critique of research into school choice carried out by Ball and colleagues (discussed above). Ball & Gewirtz (1997b), in a rejoinder to Tooley, have addressed the specific points raised about their research, particularly those that relate to (i) the selection of their sample and the suggestion that limitations might be placed on generalisability, (ii) the process of development of categories and the placement of parents in these categories and (iii) the selection of quotations in the presentation of the results of the research. The critique and

rejoinder raise a number of important questions, but neither present a clear image of what might constitute a legitimate relationship between general (theoretical) statements on the one hand and local (empirical) data on the other. Tooley clearly wishes to subordinate qualitative research to quantitative research. Qualitative research is presented as means of 'filling in' local human details where causal relations have already been established by quantitative researchers. That the establishment of causality and proof are as much a problem in quantitative as in qualitative research in the social sciences is not addressed.

The potential of qualitative research in the generation and exploration of theory, and consequently of questions of how this might be achieved and evaluated, is clearly not an issue for Tooley. Ball & Gewirtz recognise the need to be able to distinguish between 'good and bad qualitative research' (Ball & Gewirtz, 1997b, p.584) but, in responding to the specific points raised by Tooley, are drawn into the details of their own research design and analytic procedures. In outlining their conception of research, they affiliate themselves to 'Straussian analytical methods' (ibid.) and the process of development of theory through coding of data, the use of the constant comparative method and through 'theory speculation' (ibid.) and testing. Ultimately it is the product of this developmental process which is presented to the wider research community.

It is clearly difficult for this kind of research to meet Tooley's demand that 'details of the heuristic method of application [of criteria] must be made clear, so that the research community can share in the way judgements have been made, and judge their efficacy accordingly' (Tooley, 1997, p.229). To adequately describe the mode of analysis of complex data and present the results of the analysis in a thorough and rigorous manner is clearly difficult within the confines of, say, a journal article.

The form of presentation of qualitative research frequently renders problematic the relationship between the general statements that result from the analytic process and the use, in the presentation and discussion of the research, of high level concepts drawn

from variety of forms of social theory (for example, the use made by Ball, Bowe & Gewirtz, 1995, of concepts drawn from work by Harvey, Giddens, Bourdieu and Massey in the description of the outcomes of their analysis). Does, for instance, the general theoretical orientation pre-date the analysis (and thus inform the design of the study, the recognition of relevant data and the mode of analysis) or are concepts from social theory drawn upon at a late stage for their resonance with the outcomes of the analytic process? Most importantly, how are the empirical data 'read' and translated into terms that are recognisable within the specialised language of the theory?

In the presentation of my own empirical work in this thesis I have attempted to address the points raised above by making clear the relationship between theoretical development and the empirical research. In the design and conduct of the empirical studies presented in this thesis I have adopted Bernstein's view of research as founded on the construction of translation or transformation devices (languages of description) that enable the movement between theory and empirical relations in a non-circular fashion; a form of relationship that creates the potential for both theory and descriptions of empirical relations to transform each other (see Bernstein, 1996, pp.134-144). Rather than elaborate this conception of research in abstraction, I will describe the construction of my own research in Bernstein's terms.

Bernstein makes the distinction between internal languages of description (L1) and external languages of description (L2). Internal languages relate to the development of conceptual frameworks; external languages enable internal languages to describe phenomena beyond the internal language itself. The development of an internal languages thus concerns the production of a coherent and explicit system of concepts. Whilst these languages produce descriptions of empirical phenomena, and are frequently judged in terms of the adequacy of the descriptions that they produce, they do not engage in a systematic and principled manner with the empirical. In the production of social theory, for example, theorists might, in the construction of

networks of concepts, evoke phenomena external to their language as either exemplars, illustrations or critical cases. If we look, for instance, at the work of Anthony Giddens (see, for example, Giddens 1991), we see the highly productive incorporation of references to global trends, specific events and reference to published empirical research (produced by others) into the production and elaboration of a general theory of, for example, social relations in late modernity. The aim of such theorising is not to produce a strong set of principles for the recognition of relevant empirical phenomena nor to develop strong principles of description of empirical phenomena. The theory produces, rather, a systematic orientation towards the empirical, a potential for movement away from general description to empirical specifics, an explanation of the empirical but not an unambiguous specification of the principles of its description.

Internal languages will clearly vary with respect to their degree of development. A highly developed internal language will enable the production of tightly specified hypotheses or models that are open to empirical investigation. Less developed languages will produce general orientations towards the empirical and, perhaps, provide a collection of potentially productive but weakly associated concepts.

Researchers engaged in empirical investigation will bring to the field some understanding of the phenomena they are investigating. They thus bring with them some form of internal language. This might be implicit or explicit, highly developed or weakly defined. In the case of the research presented in this thesis, I came to the design and conduct of the study with both a set of professional concerns (see Chapter 1) and a range of sociological (theoretical) orientations (see Chapters 1 and 3). Both have played a part in the development of the problem being addressed and the selection of specific empirical settings within which to address the problem. My professional concerns have been dominant in the initial selection of home-school relations and primary school mathematics as empirical fields (though this selection is mediated by my sociological concern with the (re)production of social relations in and through schooling) whilst my

sociological perspective has been dominant in the conceptualisation of pedagogy, home-school relations and of primary school mathematics (though the development of my accounts of these has been in dialogue with my professional understandings and concerns). In the light of these initial theoretical orientations, consideration of the contemporary relations between parents/home and teachers/school, in general, and the particular form of intervention that takes place within the IMPACT project, has given rise to a number of empirical questions and has enabled me to identify specific empirical sites in which to address these questions. Rather than the instrumental adoption of a number of high level structuring concepts drawn from various forms of social theory, I have tried to established dialogic relationship between theory (localised to the particular phenomena in which I am interested) and empirical investigation. The production of a specialised language of description of the kind of empirical phenomena I am addressing is as much an outcome of the research as the generalised statements made on the basis of the analysis of the empirical data. The purpose of the study is both theoretical development and empirical illumination (recognising that there cannot be one without the other).

The development of the research, described in the above terms, is represented in Figure 4.1 (overpage). In the presentation of the research I have attempted to be as explicit as possible in describing the movement between theory and data. In the development and presentation of my external language of description, I have been careful to elaborate terms, to give criteria for categorisation of data and to provide examples.

The ultimate test of a language is clearly to gauge the extent to which it can be acquired and used with a minimal level of ambiguity. Acquirers have to be able to both recognise and produce legitimate statements with a high degree of reliability. In the studies of the IMPACT diaries and of parents' discussion of IMPACT tasks, the language developed is presented as a system of conceptually consistent categories

organised in the form of a network (see discussion of networks in Chapter 6). In both cases the language is tested by training other people in its use and testing the level of

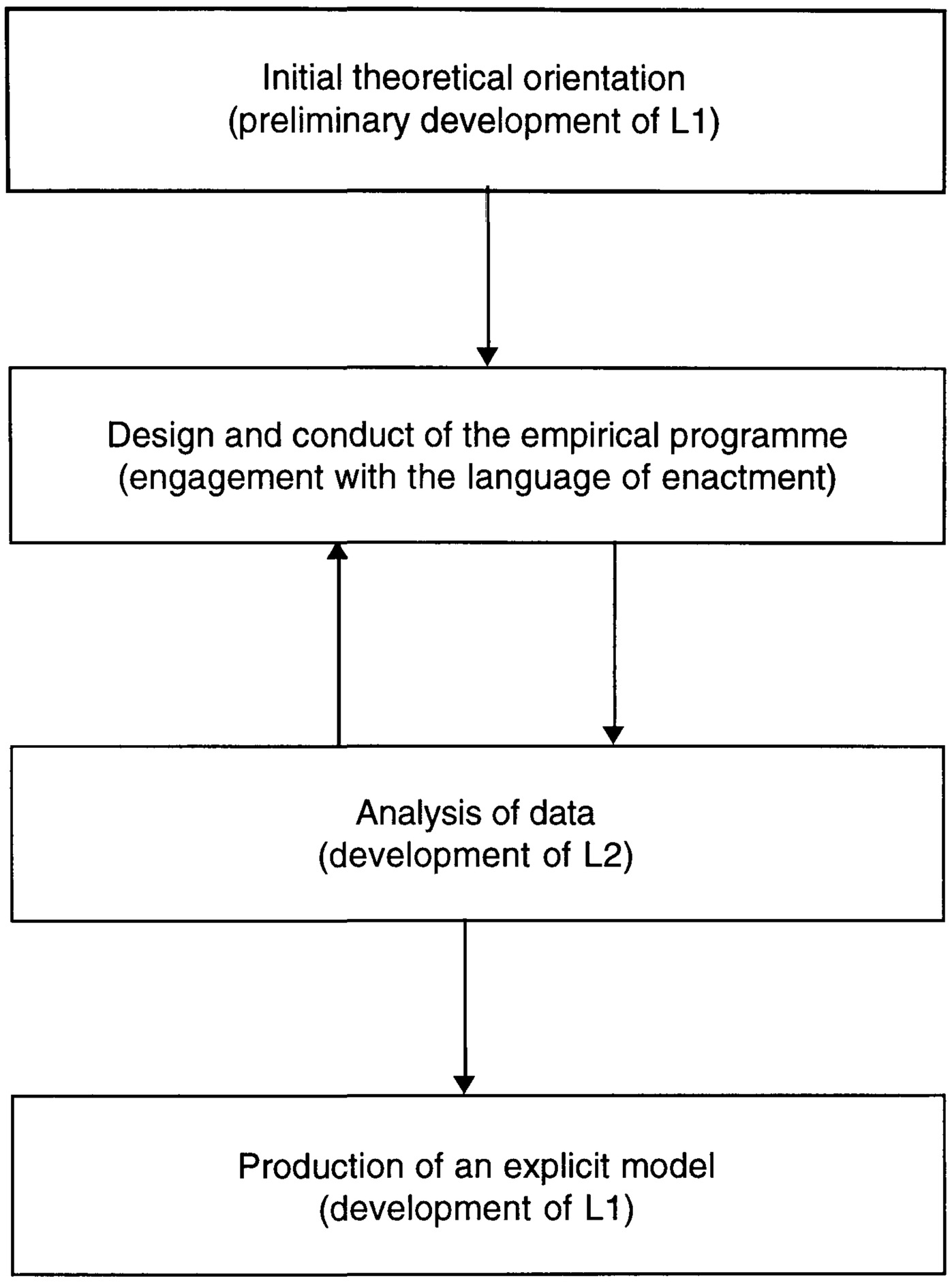


*Figure 4.1: Relationship between theory and data*

agreement in both the recognition of codable units and in the actual coding of units of data according to the network. This process is described in the account of the empirical work. The importance here is to stress that the approach being taken seeks to make the process of movement between data and analytic statements as rigorous and transparent as possible. It attempts to establish a relationship between empirical work and theory that is non-circular and thus avoids the adoption of high-level structuring concepts.

Being explicit about the treatment of data ensures that the research is open to the critical scrutiny of other researchers. Ensuring the testability of language further strengthens the statements that can be made on the basis of the analysis and maximises the possibility of the development of a language which can be adapted and applied in other contexts. In this way it is hoped to be able to illustrate one way in which the claims for qualitative research can be strengthened. The nature of the analysis carried out in this study also enables the some degree of quantification and thus blurs the customary distinction between qualitative and quantitative research.

At this point it is important to stress that analysing data in the manner outlined above is extremely time consuming. The development of coherent sets of categories requires constant movement between data and category systems in testing the adequacy of the categories and the completeness of their descriptions. In those cases where networks have been constructed, this process is further extended in the testing and revision of the networks.

## 4.2 The empirical programme

The chapters which follow describe a sequence of empirical studies which explore the positioning of parents in and through the practices of the IMPACT project. In each case a brief description of the background to the study is given, followed by a description of the conduct of the study (including the form of sampling adopted) and the principles and procedures of analysis of the data. Following on from this, the results of the study are presented and these are discussed in relation to the central research questions. The form taken by the description of the study and the subsequent discussion will vary from study to study: this reflects variation in the specific questions being addressed, the scope of the study and the nature of the data.

The empirical work was carried out in four phases. In the first phase I conducted initial fieldwork (conducted in 1990 and 1991). I attended the full range of IMPACT meetings (see Merttens & Vass, 1990, for a description of the process of the introduction and development of IMPACT, and Merttens, 1993, for a discussion of the INSET activities associated with IMPACT) and made fieldnotes from my observations, conducted interviews with teachers, recorded discussions between teachers on audio-tape, and collected print materials. In addition, the project directors gave me access to all the data collected by them in the evaluation of the early stages of the project (including audio-taped interviews with teachers, video-tapes of parents and children working on IMPACT tasks, activity packs, booklets for parents and completed IMPACT diaries). This initial phase of work enabled me to become familiar with the manner in which the project operated. It also helped me to develop a more precise focus for my subsequent empirical work and to identify appropriate settings for this work. No analysis of the data collected in this phase of the research (see Brown, 1993, for a discussion of this work) is presented in this thesis. This initial phase of the research acted as the initial motivation for the subsequent three phases of the empirical study and provided the opportunity for the collection of data for the second and third phases of the work.

The first of the studies reported here is concerned with the manner in which 'the parent' is constructed in the realisation in practice of the IMPACT project. In the review of IMPACT literature, we have seen that a particular image of the relationship between parent and teacher, and the potential for the transformation of this relationship, is presented by the project directors. In my initial fieldwork, I noted that teachers from schools serving very different catchment communities appeared to achieve a high degree of agreement about the characteristics, pedagogic practices and competences of parents. For example, groups of teachers discussing the implementation of IMPACT in their school were able quickly to reach agreement about what it was appropriate to ask parents to do, how they were likely to approach IMPACT tasks, what skills they would

bring to the realisation of IMPACT tasks, what difficulties they would encounter, how they related to the school, how they would react to requests made by the school and so on. The first study reported here represents an attempt to explore, in a systematic way, the manner in which teachers (rather than the project directors) construct and position parents. To this end I collected a sample of IMPACT booklets produced by teachers for parents. I have analysed these drawing on the language of description developed by Dowling (see Dowling, 1995, 1998a) in his analysis of secondary school mathematics texts. My analysis of the booklets for parents is presented in Chapter 5.

The analysis of the booklets illustrates the manner in which parents are often treated as a homogeneous group within the discourse of teachers. The particular way in which teachers, parents, children, school mathematics, domestic practice and the IMPACT project, and relations between these, are presented in the booklets is predicated on a range of assumptions about 'what parents are like'. This is despite clear differences between parents in their orientation towards schooling, their forms of interaction with the school, their 'pedagogic biographies', their material, social and cultural resources and so on. In response to this, the second study explores social class differences in the written interchanges between parents and teachers. The data are the comments made by parents in IMPACT diaries from four schools with contrasting intake characteristics—two predominantly working class schools and two predominantly middle class schools. The analysis focuses on *what* is relayed to the school in their comments and *how* this is relayed.

Central to the analysis of the data is the construction of analytic networks. These networks are described in detail. This includes the presentation of the criteria for each category and of exemplary statements. The networks enable the development of great delicacy in the description of the comments made by parents. As discussed above, the development of the networks constitutes the production of a language for the description of the comments made by parents. They also enable quantitative comparisons of the

types of comments made by different parents and the profiles of the comments made by parents of children from the different schools. The outcomes of the analysis are presented in Chapter 6. The networks are described in detail and tables summarising the outcomes of the network analysis in quantitative terms are presented. These tables draw attention to key differences in the profiles of the comments made in the diaries across the sample.

The third study attempts to probe further into the nature of teacher discourse, the differential access of parents to the criteria for the realisation and evaluation of school mathematics tasks and differences in the orientations to schooling and the pedagogic practices of parents from different social class backgrounds. In this study, interviews were conducted with a sample of teachers (four KS1 and four KS2 teachers) and parents (28 in total) from two urban and two suburban primary schools in the same LEA. The teacher interviews included questions addressing the manner in which they selected IMPACT tasks, how they evaluated the outcomes of the tasks, how they hoped parents would carry out the tasks, what forms of information were available in making judgements about parents and criteria for the evaluation of parents. The parent interviews addressed the manner in which they had carried out a range of IMPACT tasks and what they saw the value of the tasks as being, the nature of pedagogic practices in the home and the form of engagement with the IMPACT activities. Data was also collected on the occupational and educational background of interviewees (and, where relevant, their spouses), housing and experience of schooling. As well as discussing the specific IMPACT activities sent home, both parents and teachers were given a common IMPACT activity to discuss ('How much is your hand worth?'—see Figure 5.9).

The design of this study is described in Chapter 7. Considerable attention is given to the selection of the sample of parents and teachers. An account is given of the pilot study (carried out in one urban and one suburban school) and the development of the

interview schedules is discussed. The form of analysis adopted in this study is also outlined in this chapter and links with the form of analysis developed in the study of the IMPACT diaries are made.

The analysis of the teacher interviews is presented in Chapter 8. This gives rise to a detailed description of the criteria they use for the selection of IMPACT tasks. The selection of tasks is described in terms of the deployment of both general and local criteria. The analysis also produces a description of the teachers' ideal realisation of IMPACT tasks. In order to be able to compare the manner in which teachers and parents read school mathematics tasks, an analysis is presented of the school mathematics contents areas to which the teachers relate the task 'How much is your hand worth?'. The form of the account given of this task by the teachers is also analysed. A comparison with the readings made by parents is presented in Chapter 10. The analysis of the teacher interviews provides both the basis for a comparison with parents' reading and operationalisation of tasks and an understanding of the manner in which parents are evaluated and positioned by the teachers. These teacher interviews also provide the basis for the selection of the parent sample.

The analysis of the parent interviews is presented in three parts. In Chapter 9, the households are allocated to social class groups on the basis of the demographic data collected. This is followed by an exploration of the 'pedagogic biographies' of the interviewees. Pedagogic biography is discussed in terms of both the specialised pedagogic resources available to the parents (i.e. their qualifications in mathematics, their experience of learning mathematics and their use of mathematics in workplace and other settings) and general pedagogic resources (i.e. those acquired through professional or voluntary involvement in official pedagogic settings, such as schools). The notion of pedagogic biography thus incorporates both the experience of schooling of the parent and their subsequent positioning within the field of official pedagogic practice. This discussion culminates in the division of each of the social class groups

into two further groups. Chapter 10 draws on the interviews to examine the conditions under which IMPACT tasks are realised within the home, the orientation to official pedagogic practice of each of the four groups and their reading and modes of realisation of the IMPACT tasks. Together, this work provides the basis for the consideration of the relationship between social class and pedagogic practice within the context of the IMPACT project.

The analysis presented in Chapter 11 focuses specifically on the descriptions given by parents of the IMPACT tasks they have done with their children. The network developed for the analysis of the IMPACT diaries is adapted for this analysis. The use of networks enables the distribution of different types of statements to be mapped. The complete set of the types of statements made gives an indication of the total semantic reservoir (i.e. 'what can be said', inferred from 'what is said') from which the repertoires of the individual parents are drawn ('what they can say', inferred from 'what they do say'). By profiling the individual repertoires of the parents, a more systematic comparison can be made between the pedagogic orientation and positioning with respect to the school of parents from different social class backgrounds. Comparisons can also be made between groups within these social classes (for instance, relating to their pedagogic biographies). A detailed description of the networks is given with examples from the interviews to exemplify the distinctions being made. The results of the coding are presented in a similar format to the results of analysis of diaries. Following this, links are made to the earlier to clarify further the relationship between social class and semantic orientation.

# Chapter 5 The construction of the parent and domestic activity in the IMPACT project: an analysis of booklets for parents

## 5.1 Introduction

As stated in the previous chapter, the empirical work for this thesis was conducted in four phases. The second phase of the empirical work, reported in this chapter, involves the collection and analysis of booklets about the IMPACT project, produced by schools for parents. The principal focus of this work is to explore the manner in which parents (and teachers and children) are positioned in and through the IMPACT project in practice and the manner in which the practices of school mathematics (i.e. access to specialised knowledge of school mathematics, principles for the design and realisation of school mathematics tasks and criteria for the evaluation of performances) are distributed.

## 5.2 IMPACT booklets for parents

### 5.2.1 The use of booklets for parents in the IMPACT process

Schools participating in IMPACT frequently produce a booklet for parents. Although no mention is made of booklets for parents by Merttens and Vass (1990), it is stated in the IMPACT Process Kit (the prime means of communicating the details of the IMPACT process to participating schools up until the launch of the commercially produced IMPACT INSET Pack in October 1993) that:

> It is very nice if schools produce a booklet to inform parents about IMPACT. These do not have to be complicated, but they can be clear and attractive.

In addition, in the supporting material produced by individual LEAs advice is sometimes given regarding the kind of printed information that a school might produce for parents. The guidance pack produced in 1991 by the IMPACT Support Team for a particular LEA, which I will refer to as Rochfordshire, includes the following advice.

> Experience in launching IMPACT has shown the value of a booklet explaining to parents in a straightforward way the purpose and process of IMPACT. Amongst the advantages of producing a booklet are.
>
> - Articulating the school's belief in the value of parental involvement.
> - Giving the project 'status' in the eyes of parents and children.
> - Providing a means of communication with those who do not attend the meeting.
>
> Some schools choose to produce their own booklet, in a way they know will appeal to their own parents, perhaps including illustrations by the children. Other schools personalise a standard booklet with their own cover design or logo.
>
> A standard booklet design and text follows. Schools entering the Rochfordshire IMPACT Project should refer to the Support Teacher who may be able to assist in producing materials.

The accent here is on explanation. The booklet is seen as communicating to parents 'the purpose and process of IMPACT' and thus relaying to parents what is expected of them. The booklet is also being presented as a marketing device, an opportunity to demonstrate the commitment of the school to parental involvement in general and IMPACT in particular. The importance of teachers' local knowledge of their catchment community is acknowledged, whilst allowing the possibility for minimal adaptation of a standard booklet. Some examples of alternative covers designed by Rochfordshire teachers are included in the pack.

The emphasis in both the quotes given above is on the need for simplicity and clarity. The intention is to produce a booklet that is 'straightforward', 'not … complicated' and 'clear and attractive'. This is consistent with more general advice available to teachers on the production of written materials for parents.

The booklets have to carry the message of IMPACT and deliver it in such a way that it is understandable, with minimal ambiguity, to the notional reader. This requires some image of the ideal reader.

### 5.2.2 THE AIM OF THE ANALYSIS

It is not the purpose of the analysis presented here to attempt to reconstruct the motivations of the authors. The booklets are treated as legitimate, and public, products of teacher activity. As such they inevitably produce particular forms of organisation of the social activity of teachers, parents and children. It is this potential structuring that constitutes the focus of the analysis presented here. It is not the intention of the research to construct the range of possible readings of the texts that parents might make. It is possible—working from the understanding that the texts exemplify what can legitimately be relayed by teachers, in the context of their IMPACT work, about school mathematics, about parents, children and teachers, their activities and relations between them, about schools and homes and activities within them, and so on—to construct a description of a structure of possible positions for parents, teachers and children within the activity of IMPACT and the manner in which the message of school mathematics is distributed.

### 5.2.3 THE SAMPLE

The sample of booklets analysed was constructed in three stages. Firstly, I collected 17 different booklets during the initial period of fieldwork. These booklets had been used as exemplars by the project directors in meetings for schools new to IMPACT or had been brought along to workshops and advisory teacher meetings by participants (Sample 1).

Secondly, in order to get a broader picture of the types of material schools were producing for parents, I asked for a request for booklets to be included in all mailings to

schools sent from the IMPACT office in February 1991. Excluding duplicates, this gave rise to a further 15 booklets (Sample 2). A total thirty-two booklets (including nine IMPACT diaries containing advice for parents) were collected from these two sources. Whilst these booklets give an indication of the types of booklets produced by schools within the project, the sample cannot be taken as representative. The booklets sent to the project in response to the mailing request are the result of self-selection at the level of the school. Teachers and headteachers receiving the request have decided whether or not to send their booklets to the project office. It can be presumed that the resulting collection of booklets will be influenced by teachers' perceptions of what they feel conforms to the project's view of an appropriate booklet. A similar assumption can be made about the booklets brought to sessions by teachers. The booklets used by the project directors as exemplars of good practice can be taken to reflect directly their view of the appropriate form and content of a booklet. A sample constructed in this way enables statements to be made about the forms of booklets officially sanctioned by the project and the interpretation by teachers of the official criteria for the production and evaluation of booklets as demonstrated by the form of realisation of their own booklets. A sample so constructed does not necessarily give an idea of the full range of booklets produced.

For the specific purpose of analysis, I collected a third sample of booklets. I collected all the booklets in use at a particular point in time in one LEA. This consisted of all the booklets produced and used in the academic year 1990/1 by infant, junior and primary schools in one LEA (which I have referred to as Rochfordshire). Out of the forty-one schools in Rochfordshire receiving local authority support for participation in IMPACT in 1990/1, twenty-seven schools had, at this time, produced a booklet. Collaboration between schools in the design and production of materials resulted in some of the Rochfordshire booklets being the same, save for the name of the school. Excluding these duplicates, seventeen different booklets were collected from

Rochfordshire (Sample 3). At the point at which the booklets were collected, 14 schools had not yet produced a booklet for parents.

As the booklets in Sample 3 are all produced within the project they, too, can be seen as a test of the transmission and acquisition of criteria. The non-selective nature this element of the sample also maximises the possibility of a diversity of forms of booklets. As I do not have details of either the characteristics of the schools which did not produce booklets nor information about why they did not do so, I can neither treat the sample as representative nor am I able to draw inferences about the relationship between the form of the booklet and the nature of the catchment community of the school. The overall sample is given in Table 5.1.

| Source | Number |
|---|---|
| Sample 1 (meetings) | 17 |
| Sample 2 (mailing) | 15 |
| Sample 3 (Rochfordshire) | 17 |
| Total | 49 |

*Table 5.1: Booklet sample*

### 5.2.4 PROCEDURE

The analysis of the booklets for parents draws on the language of description developed by Dowling in his sociological analysis of a secondary school mathematics scheme (see Dowling, 1995, 1996, 1998a; see also Brown & Dowling, 1993). I have taken key aspects of Dowling's approach and deployed these in the production of a sociological description of the booklets (an outline of relevant elements of Dowling's language is given below). I started with the production of a description of one booklet from the Rochfordshire sample (the booklet produced by Tanwood Infant School). This booklet was chosen because it was used by several of the schools without adaptation and was

also used in other parts of the UK (it did not originate in Rochfordshire and had been used as an exemplary booklet in some of the IMPACT meetings I attended). Having produced this description, I then turned to the other booklets in the Rochfordshire sample (Sample 3) and, using the adaptation of Dowling's language, sought similarities and differences. From this analysis a high degree of similarity between booklets was apparent. I analysed the booklets collected from meetings (Sample 1) and the mailing (Sample 2) in the same manner in order to seek out any booklets that diverged from the Rochfordshire booklets in terms of form and/or content. One booklet was identified for further analysis in this way. This particular booklet had been designed and used by a school serving a predominantly middle class catchment area (I shall refer to this school as Kingsgate Primary School). On the advice of the local IMPACT co-ordinator, the booklet had been removed from circulation. This booklet diverged from the other booklets in a number of respects.

In presenting the outcomes of the analysis, I have given a detailed description of the Tanwood booklet, a description of the other Rochfordshire booklets in the same terms and, as a critical case, a detailed description of the Kingsgate booklet. Before presenting the outcomes of the analysis, I will outline Dowling' s language of description and give details of my adaptation of this.

## 5.3 Positioning and distributing strategies in school mathematics

Whilst there have been a small number of sociological studies of school mathematics (for instance, Cooper, 1985; Spradberry, 1976), the most systematic and sustained analysis has been by Dowling. He describes the theoretical space in which he is interested as 'concerned with patterns of relationships between individuals and groups and the production and reproduction of those relationships in cultural practices and in action' (Dowling, 1998a, p.1). The empirical focus of his analysis is secondary school

mathematics. Through the detailed analysis of books from SMP 11-16, a secondary school mathematics scheme published by Cambridge University Press and used widely in UK schools, Dowling develops a highly detailed language of description (see Bernstein, 1996; see also discussion in Chapter 4) which has applications beyond the analysis of school mathematics. I am not going to describe the full scope of Dowling's work here; rather, I will describe his language of description in general terms and focus on those aspects which have been particularly influential in the development of my approach to the sociological analysis of the IMPACT project.

Dowling sees the social as comprised of a range of *activities*. School mathematics is one such activity. An activity is understood as a regulating structure much as Foucault (1973) describes, for example, medical discourse as regulating clinical practice. Activities are constituted by and reproductive of the division of labour in society. Each activity acts to specialise *practices* (i.e. mark out *what* can be said, done or meant) and to establish specialised *positions* that can be occupied by human subjects (i.e. establishes *who* participates in the activity). The practices of an activity are distributed within the array of (potentially hierarchical) positions. Thus activities act to regulate *who* can say, do or mean *what*. School mathematics is thus seen as constituting, and constituted by, an array of positions across which are distributed a range of practices.

The practices and positions of an activity are realised in texts (seen as an utterance or sequence of utterances within the context of one or more activities). All texts produce authors and readers. Dowling's particular interest is in pedagogic texts. In these texts, authors are constituted as transmitters and readers as acquirers. These are textual realisations of positions within the activity. At the level of the text, practices are instantiated as *message* and positions as *voices*. The relationship between activity and text is, for Dowling, analogous to the relationship between langue and parole or between structure and event. There is thus a dialogical relationship between activity and

text; activity is only analytically accessible through texts, in the same sense that langue can only be accessed through parole.

At the structural level (activity), Dowling proposes four domains of school mathematics practice. These are constituted by considering the extent to which content (signifieds) and expression (signifiers) are specialised. The most strongly classified domain is the *esoteric domain.* Here both content and expression are strongly classified, that is we have specialised mathematical content with specialised mathematical expression. The least strongly classified domain is the *public domain.* Here both content and expression are non-specialised. The construction of these four domains enables Dowling to explore the manner in which school mathematics recontextualises practices from other activities, including everyday and domestic practices. In Dowling's language, school mathematics is a *high discursive saturation* activity. This refers to the degree to which the activity is discursively complex, regulated by principles which can be explicitly elaborated and capable of producing abstract descriptions—characteristics of intellectual activities. Activities whose practices exhibit *low discursive saturation* are, in contrast, characterised by implicit regulating principles and context specific utterances—characteristics of manual practices.

School mathematics, as a pedagogic activity, constructs a hierarchy of positions via the distribution of practices. The dominant position in the activity is the *subject,* with full access the principles of the activity (the position of the transmitter). The three subaltern (acquirer) positions proposed by Dowling represent differing degrees of potential access to the principles of the activity. The most subordinate of positions are the *objectified* positions which are ascribed zero subjectivity. Next are the *dependent* positions, which area ascribed minimal subjectivity. Finally, there are *apprentice* positions. For the activity to be (re)produced, it has to recruit new *subjects*. This is done through a process of apprenticeship into the regulative principles of the esoteric domain of the activity. The apprentice is thus a potential subject.

The structural level of Dowling's language enables the description of an activity, like school mathematics, in terms of the distribution of practices across a range of positions. In order to enable empirical investigation he has, however, to develop his language at the *textual* level. At the textual level of the language, *message* and *voice* correspond to the practices and positions of the structural level. Through a range of *textual strategies,* pedagogic texts (re)produce features of the activity. They constitute a range of voices, a subset of the range of positions produced by the activity. Pedagogic texts thus construct an *authorial* voice which corresponds to the subject of the activity. Dowling notes that they may also produce a spurious or *displaced* authorial voice. Pedagogic texts also construct a range of reader voices: *apprenticed, dependent* and *objectified.* The apprenticed and the dependent voices represent two different acquirer voices which differ with respect to potential access to the principles of the activity.

To achieve the (re)production of the voice structure and the distribution of the message of the activity, texts incorporate a range of *distributing* and *positioning* strategies. Distributing strategies effect the distribution of the message across the voice topography of the text. Positioning strategies effect more directly the establishment of relationships between voices. Dowling identifies five positioning strategies: interpolation, identification, objectification, affiliation and displacement. Turning to distributing, Dowling proposes four textual strategies. The first two address the *range* of the message. *Expanding* broadens the message being distributed to a given voice in terms of the range of esoteric domain topics and public domain settings. *Limiting*, on the other hand, narrows the message in terms of topics and setting. The second two address the *discourse* of the message. Here, distributing strategies can be either *abstracting* or *particularising*. Particularising occurs principally through a process of *proceduralising,* in which exemplars and procedures are presented in place of the principles of an activity. Abstracting, on the other hand, takes place principally through a process of principling, which involves the use of definitions, classifications and other

techniques to express the regulating principles of a high discursive saturation activity or practice. The combination of the limiting of range and abstracting of discourse leads to the *specialising* of message. The combination of expanding and abstracting leads to the *generalising* of message. Particularising of discourse and expanding of range gives us the *fragmenting* of message, whereas the combination of particularising of discourse and limiting of range gives us the *localising* of message.

At the third level of his language, Dowling describes the *resources* that are drawn on by the SMP 11-16 scheme in the elaboration of textual strategies. The structural and textual levels of the language are, according to Dowling, primarily the product of a process of deduction. It can provide the recognition and realisation principles for the description of an empirical text but it cannot pre-empt the particular form of the empirical text. He thus has to describe the particular repertoire of resources which are deployed by any given text in the elaboration of textual strategies and thus, ultimately, achieve the (re)production of the activity. Drawing out the relationship between textual resources and the other two levels of the language constitutes the major part of the presentation of Dowling's empirical work. One achievement of this is to demonstrate the way in which school mathematics texts position low achieving children as dependent and high achieving children as apprentices to school mathematics, whilst at the same time producing an association between social class and ability.

In the analysis of IMPACT texts, there is much to be gained from the language developed by Dowling. Although I have presented his work in a highly condensed and abstract manner, there is clear resonance between the approach to issues outlined in the previous sections of this chapter and the approach taken by Dowling. Dowling's form of analysis is aimed at 'monologic' texts (see Dowling, 1998a, p.112: Dowling, 1998b, has demonstrated how his language can be applied to the analysis of dialogic text by resolving these into monologic texts), that is those which are the product of one author and one activity. This makes the approach particularly appropriate for the analysis of

IMPACT booklets and I have drawn on features of his framework in my analysis. My subsequent analyses have departed from this in that they attempt to develop a language of their own in the movement between the empirical text (diary entries by parents and transcripts of interviews with parents and teachers) and theory .

## 5.4 Analysis

The analysis of specific texts requires the development of the third level of Dowling's language, *resources*. From the description above we can see that (i) the activity is seen as regulating who can say or do what to or with whom; (ii) the positions and practices of an activity are (re)produced as a structure by individual utterances and actions (texts) in a dialectic which is analogous to the regulation of speech by language and the reproduction of language by speech; (iii) at the level of the text, the 'who/whom' of school mathematics are realised as *voices*—for example, teacher, students, parents, with various categories of each—and the 'what' as *message*. Thus, in analysing the IMPACT booklets, I am describing the manner in which particular textual *resources* are deployed in the production of *voices* and the distribution of *message* within the texts which, in turn, (re)produce the *positions* and *practices* of the activity.

### 5.4.1 Analysis of the Tanwood booklet

The booklet, from Tanwood Infant School, is reproduced in Figures 5.1 to 5.8. It has been constructed by folding in half two double-sided photocopied A4 sheets, producing a booklet with eight A5 pages. The text has been printed with a dot-matrix printer and a large sans serif font is used. The illustrations are in the form a simple line drawings. The production of any text involves the selection (made either explicitly or tacitly) from a notional reservoir of resources resulting in the particular repertoire of resources which make up a specific text or collection of texts. Clearly the resources available include

those relating to the format and method of production of the text. In this case the physical form of the text might be seen as having a *localising* effect. It is clearly amateurish and personally produced. The use of large print and simple line drawings, reproduced on a photocopier and folded by hand has a local feel and localising effect (the more so with many other booklets in the sample which are hand-written and include children's or childish drawings). The parental involvement initiative is for the local parents of local children at a local school. A contrast can be drawn with, for instance, the booklets produced for parents by the government, such as The Parents Charter (DES, 1991), which are professionally printed on glossy paper with colour photographs.

In describing the repertoire of resources incorporated in the SMP 11-16 scheme, Dowling distinguishes between three signifying modes: icon, index and symbol. *Icons* bring together a visual code and a physical viewpoint, that is they are pictures in which the position of the reader as viewer is encoded. All the pictures in the Tanwood booklet are, by this definition, icons. The cover, for instance, includes a line drawing of a bear holding an IMPACT sheet. The bear is shown as looking directly out of the frame which thus positions the viewer. Icons can be scaled in terms of their modality, that is the degree to which they lay claim to a reality beyond the image. Dowling distinguishes between cartoons (in which, for instance, physical features might be exaggerated and thus the modality of the image weakened), drawings (which are seen as exhibiting stronger modality as they can be seen as representational) and photographs (which have the strongest modality of all as they signify the real presence of the camera). The stronger the modality and the visual code of presence, the stronger the localising effect. *Indices*, in contrast, are images with no code of presence. In other words, they do not physically position the reader as a viewer. Examples of indices include diagrams, geometric figures and graphs. The alphanumeric text on the page gives us the final mode of signification. Dowling refers to this as *symbolic* text. It operates predominantly

on the basis of non-visual codes. It is organised on the page in a linear fashion and, visually, incorporates no visual code of presence. The cover of the Tanwood booklet includes symbolic text.


*Figure 5.1: Tanwood booklet cover*

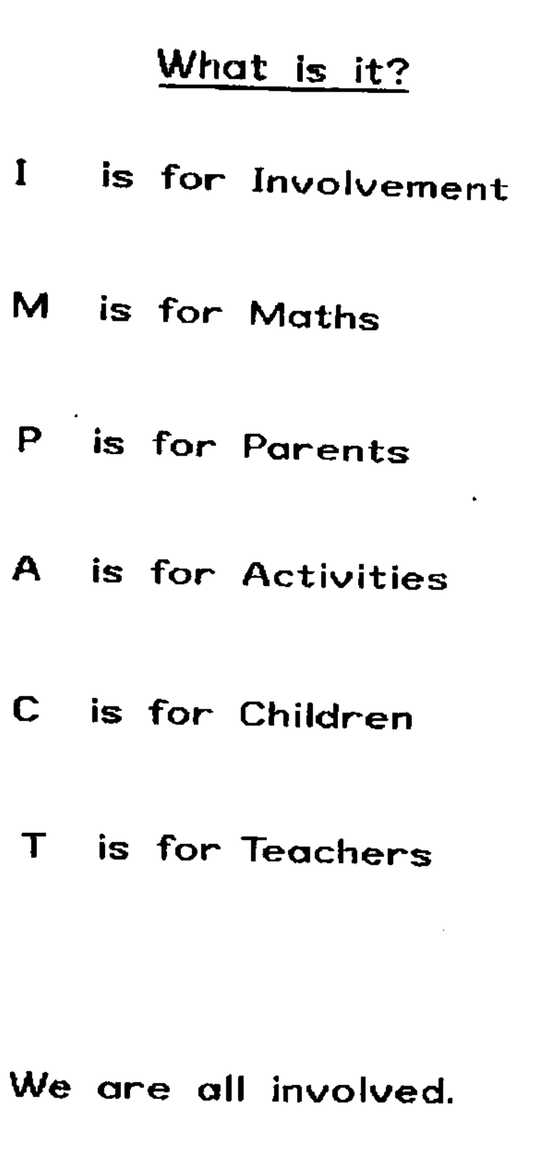


*Figure 5.2: Tanwood booklet page 1*

The text on the cover of the booklet announces and organises the voices of the school, the child, the parent and the IMPACT project (Figure 5.1). The authority of the school is signified by the use of large capital letters at the top of the page. IMPACT, however, takes pride of place with even larger capitals, embellished and placed at the centre of the frame. It also appears on the sheet being held aloft by the bear/child. The parent is identified as the addressee in 'normal' print at the foot of the page. The child is not addressed, but is referred to in relation to the parent/reader and is thus objectified. This booklet is clearly, as would be expected, a statement made by the school with the authority of the IMPACT project and addressed to the parents and carers of children at the school. The initiative is concerned with 'enjoying maths'. In the lower half of the cover is the first of three 'bears' images. The child (bear) arrives home holding aloft the

offer that promises to have such a beneficial impact on its education. The offer carries the authority of the school and the IMPACT project, both heralded in large, capital letters.

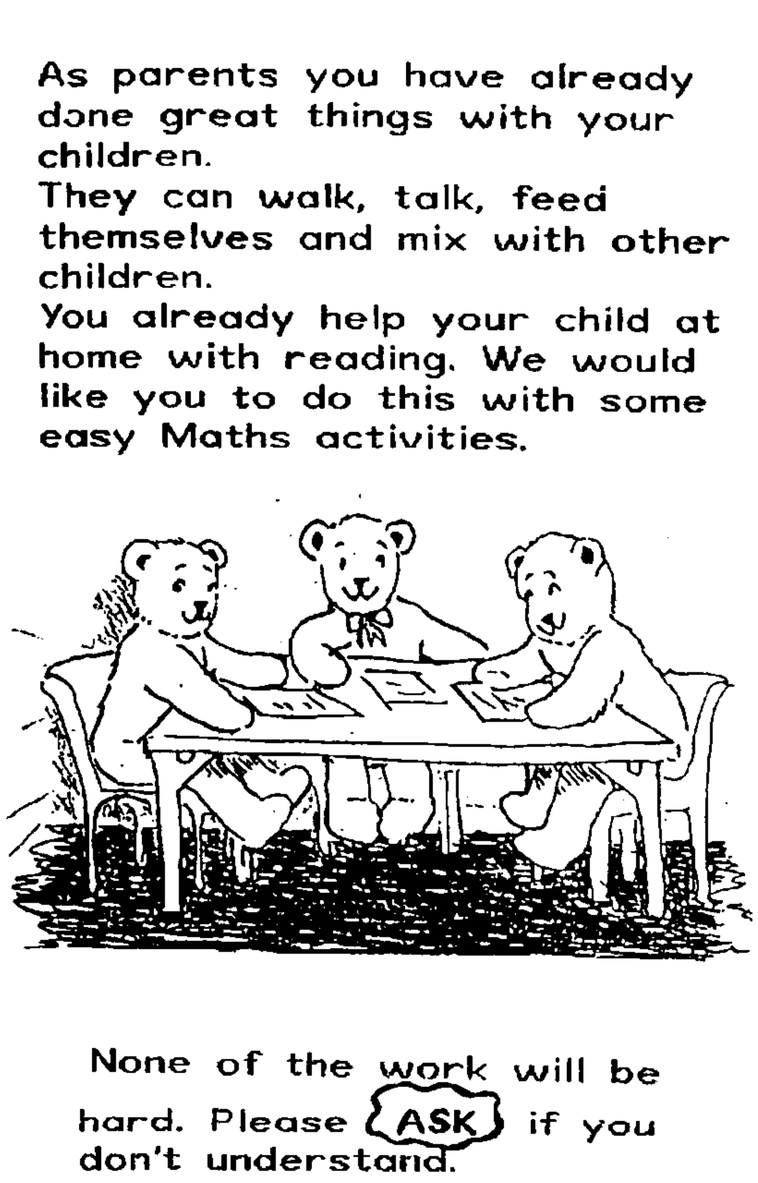


*Figure 5.3: Tanwood booklet page 2*

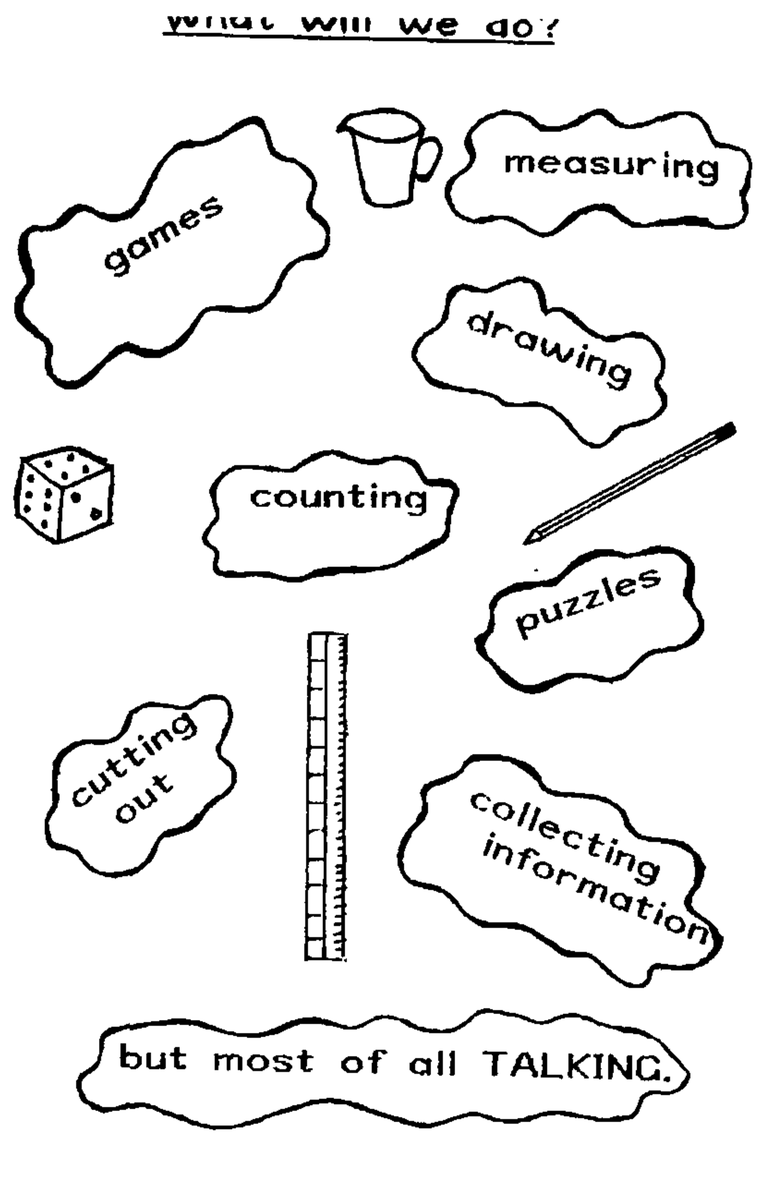


*Figure 5.4: Tanwood booklet page 3*

The second 'bears' image, which occurs midway through the booklet (Figure 5.3), is a promise: the domestic space has been transformed; everyday activity has been put aside and the dinner table has been appropriated as a site of mathematical activity; mummy, daddy and baby look out at us, smilingly delighted. The final frame in the 'bears' sequence (Figure 5.8) is the anticipated response to the offer—eager expectation. Mummy bear is culturally fixed—despite being a bear—by the pleated smock, by the gathered curtains in the window and flowers in the garden. She stands at the open door as baby arrives with the first IMPACT task that they can enjoy together and 'HAVE FUN'.

What will happen?

Two or three times each half-term your child will bring home an Maths activity.

The activity will be explained to the children before they bring it home.

It will be linked to the Maths the children are doing at school.

We will follow up the work afterwards in school.

It WILL be Maths even if it doesn't always seem like it.

*Figure 5.5: Tanwood booklet page 4*

How can I help?

TOGETHERNESS - We hope a parent/guardian or another member of the family or a friend will help your child with the activity. Your child will really benefit from your involvement.

LISTEN - Encourage your child to tell you about the activity. HE or SHE is in charge.

COMMUNICATION - We would like to know how you got on. Perhaps you would like to help your child fill in the diary.

ENJOYMENT - We know and hope that you will enjoy the project.

HELP AND SUPPORT - Help your child to carry ou t the activity but please don't do it for them.

*Figure 5.6: Tanwood booklet page 5*

Programme

1. Let your child explain the activity.
2. If there is an instruction sheet read it for yourself.
3. Help your child carry out the activity.
4. Fill in the diary and return everything to school.

*Figure 5.7: Tanwood booklet page 6*

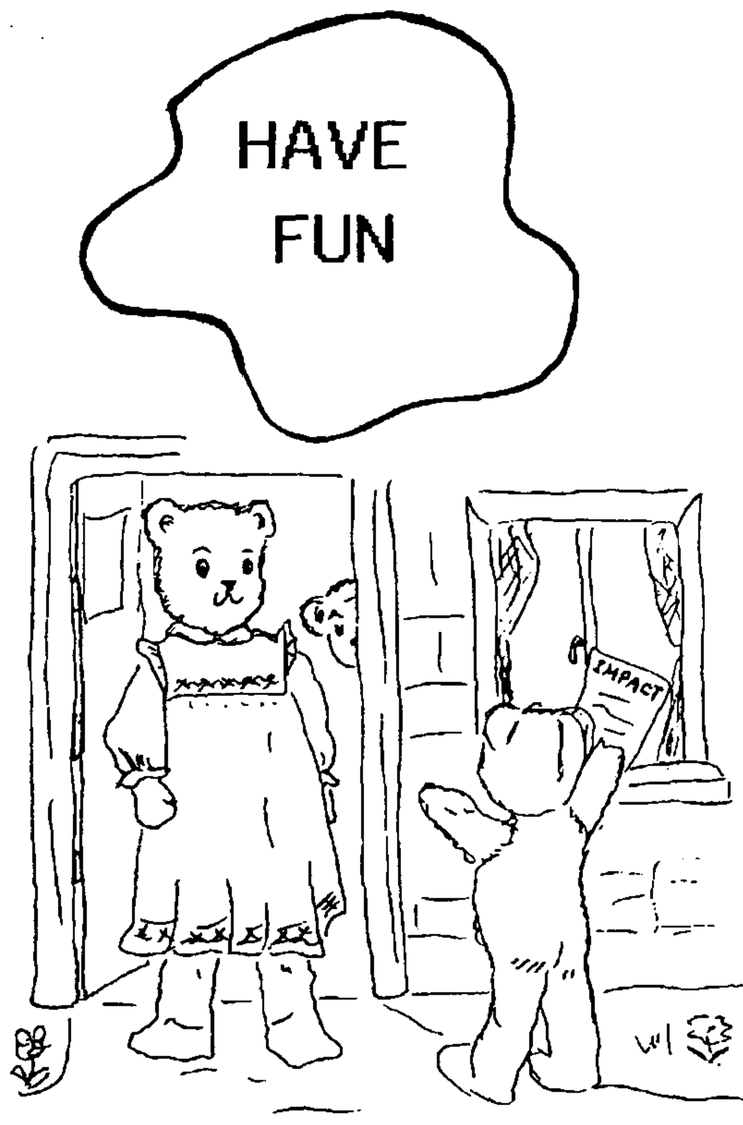


*Figure 5.8: Tanwood booklet page 7*

The use of cartoons in this way reinforces localisation. The parent (reader) is positioned as looking in on the scenes represented in the cartoons and witnesses the transformation that has taken place as a result of the successful implementation of

IMPACT. The use of icons, with their strong code of presence, strengthens localisation. The form of icon used does not, however, have the strongest modality. The specificity of the domestic situation has to be reduced in order not to alienate the reader. A photograph, whilst positioning the reader as viewer of, and possible participant in, a 'real' domestic situation also makes clear that the domestic setting depicted is not that of the reader. In terms of economic, social and cultural characteristics, a photograph is too specific to engage an economically, socially and culturally diverse readership. The cartoons enable activity to be situated in a localised domestic setting without specifying in too great detail the characteristics of this setting.

The written text elaborates the nature of the offer being made. The text in Figure 5.3 points out that the parent has already 'done great things with' their child, 'they can walk, talk, feed themselves and mix with other children'. As these are already achieved; the question still remains as to what is being offered to the parent. The text refers to an offer previously taken up, 'you already help your child at home with reading'. It then introduces the specific issue addressed by the IMPACT project: 'we would like you to do this with some easy Maths activities'. The 'activities' will be easy and support will be available and 'we know and hope that you will enjoy the project' (Figure 5.5); 'HAVE FUN; enjoy maths with your child'. The offer is the filling of a space made vacant by the, as yet, failure of the parents to keep pace with their child as s/he moves from home to school, from learning to walk to learning maths, from 'primary socialisation' to education. In developmental terms, the parents are now redundant, but the space and the parents' control of it can be usefully appropriated by the school for the benefit of the parents' own child. The voices are now in position, ready for the distribution of message.

If we look at the manner in which school mathematics is presented in the booklet, it is apparent that neither the criteria by which mathematics is recognised nor the rules for the realisation of pedagogic action are transmitted. The parents cannot become teachers.

In any case, they need not as 'the work will not be hard' and they can 'ASK if [they] don't understand' (Figure 5.3). The tasks are given meaning as elements in the normal pedagogic activity of the school (Figure 5.5), simple principles for the engagement of parents are outlined (Figure 5.6) and routines established (Figure 5.7) which enable the parent to participate. The school also identifies the objects and activities within the home that should be recognised as mathematics (Figure 5.4): games, cutting out, using rulers and dice, and so on. Parents should not worry if they are not clear what this is all about as 'it WILL be maths even if it doesn't always seem like it' (Figure 5.5). School mathematics is thus elaborated here purely in procedural terms, the principles which structure the activity are not made visible.

The absence of discursive elaboration localises the participation of the parent. The presumed competence of the parent is in the following of instructions and, in the response sent back to the school, providing a personalised commentary on their own and their child's engagement in the task, but not in terms of assessing mathematical value or success, nor in the production of additional (valid) tasks[1]. Thus 'we are all involved' but each in the correct position in the voice structure. The teachers are the guardians of the recognition rules which appear nowhere in the booklet. The parent is a provider of domestic space and of local regulative control. Parents are thus ascribed certain expertise, but this is localised to the domestic context, to their particular child and to the early socialisation of the child. The teachers' expertise in the areas of pedagogy, school mathematics and the realisation of the pedagogic potential of the home is clearly marked out but the principles underlying this expertise are not made explicit. Parents and teachers are thus presented as having distinct areas of expertise (which are presented as complementary, as different but equal). Parents are positioned as

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[1] This localising of parents' competence is also evident in the response sheets that are sent home for parents and children to complete. In the example given in Chapter 6 (Figure 6.1) the child is asked specifically to report on their own reactions to the task (did they like it, was it hard or easy, did they

dependent on the teacher with respect to school mathematics. The child is a relay, from school to home and back again. The child is also the objectified site of experiential and mathematical elaboration: the parent is told to 'help your child to carry out the activity but please don't do it for them'. It is the doing of the task and the 'talk' which accompanies the doing—'but most of all TALKING' (Figure 5.4)—that has the impact on the child[2]. Thus described, the project offers a form of participation by parents in the mathematical education of their children which actually constitutes an extension of the domination of the school and a regulation of domestic activity; the result of non-participation is tantamount to a self-pathologising by the parent. Furthermore, the manner in which legitimate parental participation is described not only presumes no expertise in the area of school mathematics pedagogy and content on the part of the parent, it also leaves no space for such expertise to be realised. Going beyond 'talking' is viewed negatively. All forms of talk are presented as equal.

In the above analysis of the Tanwood booklet, I have drawn on Dowling's language in an attempt to demonstrate how this particular text constructs the voices of the parent, the teacher/school, the IMPACT initiative and the child and distributes the message of primary school mathematics across this voice structure. A range of textual resources are implicated in the positioning and distributing strategies deployed in this construction. The teacher/school is presented as dominant, with presumed access to the principles of the discourse of primary school mathematics (though questions have to be raised about the extent to which primary teachers, ultimately, have access to these principles themselves—see, for instance, Carre & Ernest, 1993). With respect to school mathematics, parents are presented as dependent. No access to the principles of the

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learn a lot or a little) and the parent to comment on the event and the child's engagement (did it go well or badly, was it hard or easy, how much help was needed, did the child learn a lot or a little).

[2] There is an implicit, and familiar, form of Millsian empiricism at work here in the suggestion that the 'experience' leads more or less directly and spontaneously to 'mathematical development'. See Bloor's (1976) discussion of John Stuart Mill's empiricism. See Walkerdine (1984, 1988) for a critical

discourse is presumed or offered. As presented in the booklet, parents cannot become a teachers; they can only act on the teachers' behalf. The school is opening up the home as a potential site for official pedagogic practice, but in doing so is placing the parent in a subordinate position. The child, as pointed out above, is objectified, presented as little more than a relay and as the object of pedagogic action.

### 5.4.2 Application to the Rochfordshire sample

The description above has drawn attention to the following features of the booklet.

(i) *Format and construction.* The format of the booklet emphasises the localised nature of the offer being made to parents.

(ii) *Mode of pictorial representation.* The use of cartoons reinforces localisation.

(iii) *Establishment of voice structure.* The school and the IMPACT project are presented as dominant and the parent as subordinate. The child is objectified as a relay between home and school and as the object of pedagogic action.

(iv) *Representation of the pedagogic potential of the home.* The spontaneous pedagogic action of the parent is presented as having been successful but now exhausted, thus opening up the home as a potential pedagogic space for the school.

(v) *Representation of parental involvement.* The form of engagement of parents is presented in the form of procedures without reference to the principles that underlie the elements of this. The form of engagement proposed makes no reference to specialised subject or pedagogic knowledge on the part of the parent nor possible differential access to these.

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discussion of the manner in which notions of experience function in the rhetoric and practice of primary school mathematics.

(vi) *Representation of school mathematics.* School mathematics is presented in procedural terms. The criteria for recognition and the principles for the legitimate realisation of school mathematics are presented as resting with the school.

There is little apparent variation amongst the Rochfordshire booklets. The degree of variation with respect to these features is described below. I have numbered the booklets and have used this number when referring to particular booklets below (with the prefix R for Rochfordshire).

#### *5.4.2.1 Format and construction*

All 16 of the other Rochfordshire booklets were similar in construction to the Tanwood booklet. Each has been constructed by folding double sided photocopied A4 sheets in half to produce an A5 booklet. Excluding the front cover, between six and eleven pages are used for a combination of written text and visual images. The text in eight of these booklets is hand-written. The text in the other eight booklets, like the Tanwood booklet, is printed using a large font size either using a dot matrix printer (six booklets), a typewriter (one booklet) or a laser printer (one booklet—R12—which is a cut and paste rearrangement of a sample booklet produced by the LEA). All have the recognisably 'local' and 'amateur' feel of the Tanwood booklet.

#### *5.4.2.2 Mode of pictorial representation*

All the booklets contain visual images. The number of images vary from one to eight. All are iconic. The images are either drawings (for instance, of a child filling a teapot) or cartoons (for instance, of a character with exaggerated physical features spinning on his head). In some cases the images—depicting various domestic activities, such as cooking—appear to have been drawn by children. In only one of the booklets (R5) is a narrative of the type seen in the Tanwood booklet. In this booklet the same

three 'bears' images are used but are supplemented by three more such images—one showing baby bear doing the washing up, one showing mummy cutting up a cardboard box and baby holding an IMPACT sheet and one showing daddy and baby on a rug playing a board game together. In the other booklets the images either illustrate activities described in the text (e.g. a clockface with legs and arms next to a timing activity in R10), exemplify 'mathematical' activities in domestic settings (e.g. a child's drawing of someone cooking in R16), show objects being associated with school mathematics (e.g. drawings of rulers in R3, 10, 14 & 15) or act as decoration (e.g. text framed by cartoon figures in R4, 8, 9 &13). In all cases the points raised about the Tanwood booklet appear to hold. The use of young children's drawings identifies the booklets even more strongly with the primary school and further localises the message (these images are the product of 'our' children).

#### *5.4.2.3 Establishment of voice structure*

All the booklets announce IMPACT on the cover. All except four (R6, 11, 12 & 13) announce the name of the school. In all cases the parent is addressed as the reader in the same manner as the Tanwood text. The child is not addressed—they are present in all texts only as the objects of pedagogic action and as relays of the activities and the activity outcomes. All except three booklets (R4, 8 & 11) take a page (usually the first or second page) to spell out the IMPACT acronym.

#### *5.4.2.4 Representation of the pedagogic potential of the home*

All except two of the booklets (R3 & 15) begin with a reference to the prior pedagogic achievements of parents (e.g. the phrase 'As parents you have already done great things with your children …' is used in eight of the booklets) or reference to current pedagogic practices within the home (e.g. the phrase 'you already' followed by reference to either reading or talking to children about school activities appears in all booklets except R3 & 15). As with the Tanwood booklet, these booklets identify official pedagogic potential

within the home whilst at the same time establishing the limitations of the local pedagogic practices of the parents either in terms of having been exhausted by the transmission of basic competences or as being limited in scope (e.g. reading and/or talking about school).

Booklets R3 & R15 have identical text. This begins with an invitation for parents to participate: 'Would you like to help your child to enjoy Maths? There is a way that you can HELP'. The appeal being made here is differs from the other texts in that no attempt is being made to represent domestic practices or local pedagogic practices in any way nor to articulate the practice of IMPACT with existing practices within the home. There are also slight differences from the Tanwood booklet in the manner in which parental participation and school mathematics are presented; these are discussed below.

#### *5.4.2.5 Representation of parental involvement*

All the booklets present parental participation as involving only general competence on the part of the parent (e.g. talking to their child) with no mention or presumption of specialised subject or pedagogic knowledge. All the booklets mention talk as a key element in realisation of the task. All except R11 & 12 mention enjoyment as important. As in the Tanwood booklet, the involvement of parents in doing activities with their children is presented as one element in a procedure that starts with the teacher selecting and sending home an activity. Only general advice is given on what parents should do (e.g. 'let your child explain the activity', 'listen to your child', 'work together') All the booklets ask for comments from the parents.

Only the text of R3/15 follows the Tanwood booklet in stating explicitly that the parent should not to do the task for the child. The text in these booklets states that 'Usually activities will be linked to class maths work. The activity will be explained in the classroom before being sent home. Encourage your child to tell you about the activity. Then read the sheet yourself. Help your child to carry out the activity, but don't

do it for him/her.' Care is being taken here to control the process of realisation of the IMPACT task, with apparent concern to assert the authority of the school and prevent over-involvement of the parent in determination of the outcomes of the activity.

#### *5.4.2.6 Representation of school mathematics*

There is clear consistency across the sample in the manner in which mathematics is presented as the dominion of the school. In all cases a range of domestic activities (such as cutting out, measuring, playing games, drawing, talking, collecting information) are indexed as being to do with school mathematics, but no indication is given to how or why. In all booklets, except R5, parents are assured that 'It will be maths, even if it doesn't always seem like it' (R4 & 8 have substituted the more general 'school work' for 'maths'). The criteria for the recognition of school mathematics, for the realisation of tasks and for the evaluation the outcomes are not made explicit. All the booklets except R3/15 state that parents should 'ask if you don't understand'. The parent here is constructed as a dependent voice. In the R3/15 text parents are invited to ask teachers but in a slightly different manner. It states in large letters on the last page of the booklet: '?any questions, come and ask'. In this formulation the possibility that parents might not understand is not explicitly stated. The last sentence on the page before this legitimates the IMPACT activities by stating that: 'All activities are linked to the National Curriculum'

Twelve of the booklets supplement the general description of IMPACT tasks by giving one or more specific examples. Booklets R1, 4, 7, 8, 9, 10, 13, 16 include a version of the following (quoted from R1) 'Just One minute. How many time can you count to 10 in a minute … or dad or granny or big sister …?'; R2 includes the following 'How much water does a marble displace in a cup?'; R5 has this activity 'How long does it take an adult to wash up? How long does it take to get ready for bed?'; R12 has a drawing of a hand with four 1p coins grouped together on it with the question 'How

much is your hand worth? written beneath it; R14 states 'IMPACT activities look like this' and then gives four examples, the first of which is 'Ageing Coins. Collect as many coins as you can. Make rubbings of them in order of age. How old is the oldest coin?'.

The selected examples of IMPACT activities are presented without commentary. Whilst they illustrate the form that the tasks being sent home might take, they do not address the question of how they are to be understood as school mathematics, the different readings that parents might make of the tasks, the different ways in which the task might be realised as an activity nor how the outcomes of the activity might be evaluated. In this way they further reinforce the dependency of the parent. The criteria for the realisation of the task and the evaluation of its outcomes reside with the school and may or may not be available to any particular parent. To illustrate the possible disparity between professional (teacher) and lay (parent) readings of the task, I will take one example and look at this in greater detail. I have selected 'How much is your hand worth?' This is presented in somewhat condensed form in booklet R12. It is presented in more fully elaborated form in the IMPACT activity bank (see Figure 5.9). This activity is described by Merttens and Vass as being a 'standard' (1990, p. 121) and is used as an example by Merttens & Mayers (1992).

On the sheet which the child takes home, the task is presented as a series of instructions which the parent and child must follow. The task is highly localised, in terms of context, and consists of a number of everyday (non-specialised, public domain) actions or operations (for instance drawing and counting) involving everyday (public domain) objects (for instance, hands and coins). These are recontextualised through their incorporation into school mathematics. Thus school mathematics is projected onto the domestic space through the appropriation of familiar domestic objects and actions which are referred to esoteric domain interpretants (for instance, mathematical objects and relations). Clearly the question, 'how much is your hand worth?', only makes sense within this school mathematics context. The esoteric domain

acts to structure the task and comes into play in the embedding of the task into a curricular sequence within the school, in the evaluation of the products of the task, and in the formulation of subsequent pedagogic action, but, as with the booklet, it is not at

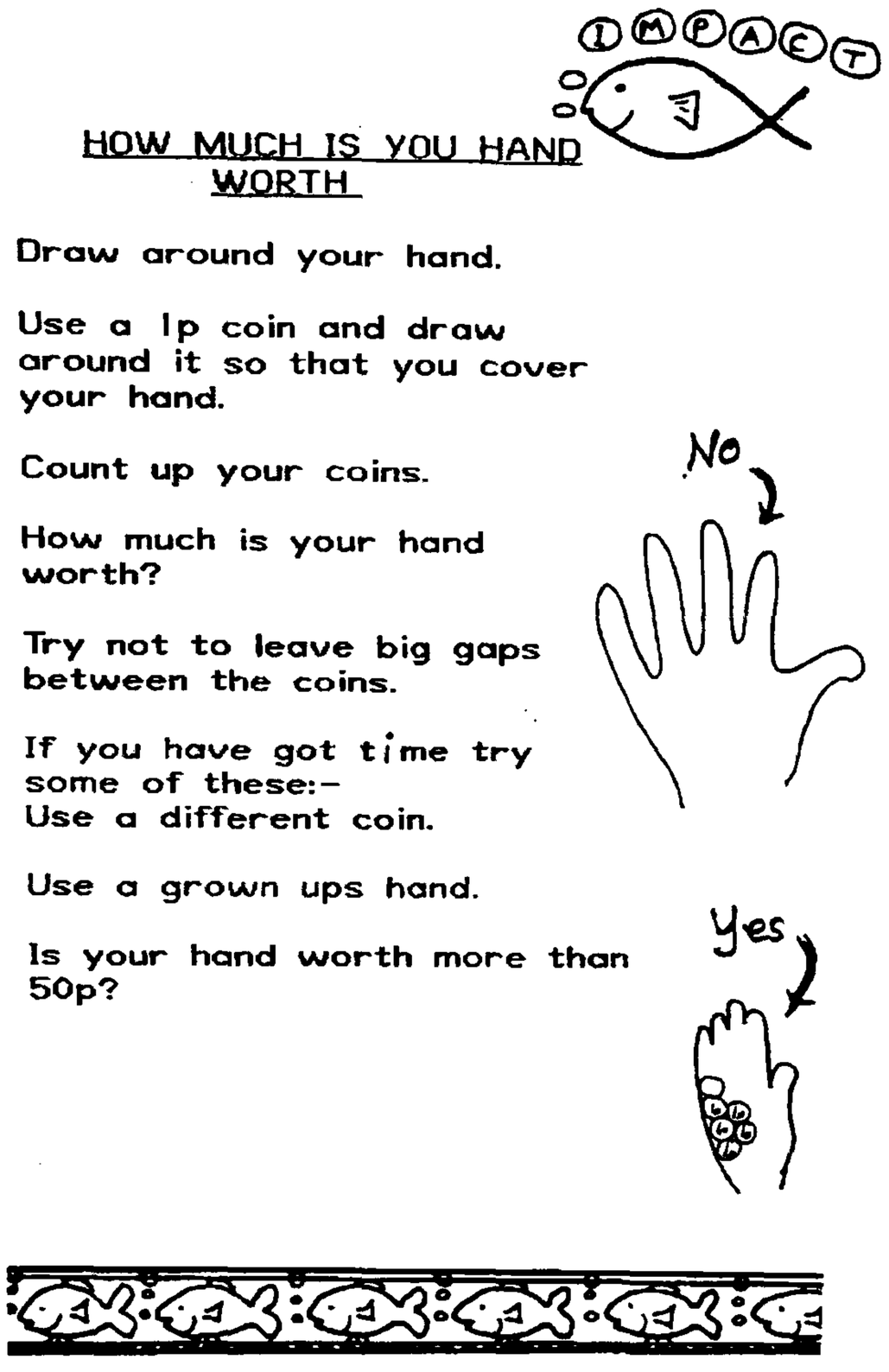


*Figure 5.9: 'How much is your hand worth?'*

all visible within the task as it is relayed. The reader knows that it is mathematics as the task occurs within the context of IMPACT. What is not immediately clear is *how* it is maths, and thus no access is given to how the task might be operationalised to the greatest pedagogic effect, how other similar tasks might be formulated or how the outcomes of the task might be evaluated[3]. As we have seen above it is envisaged that

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[3] On the other hand, reading the task from the position of a teacher of primary mathematics gives some insight into the school mathematics potential of the task. Drawing around your hand projects a three

the child act as a tutor to the adult in the elaboration of this task—they are prepared in the school and are 'in charge' (Figure 8) at home—but, again, this constitutes only a relaying of the task procedure, not an explication of its mathematical or pedagogic (esoteric domain) interpretants and does not incorporate discursive principles. The child relays the procedure, the parent is then in a position to provide the controlled space within which the child's pedagogic therapy can proceed. In terms of strategy, public domain procedures, only, are distributed to child and parent, to the latter partially via the former and to both via the task sheet. I will return to consider the 'How much is your hand worth?' task in more detail in Chapter 8.

#### *5.4.2.7 Conclusion*

The above indicates that other booklets in the Rochfordshire sample are very close in form and content to the Tanwood booklet. It would appear from this that the conclusions drawn about the positioning of parents and the distribution of the message

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dimensional object onto a (two dimensional) plane which gives us a bounded area that can be measured (although the example on the sheet shows just a line, with no enclosed area). A coin could be used as a non-standard unit for the measurement of this area, as long as just one size of coin is used and as long as we do not overlap the coins. Covering the drawing with 1p coins and counting these will thus give us an approximation of the area if we take care not to stay within the boundary of the shape and if we attempt to minimise the gaps between the coins. We have to be sure, of course, that the area of the coin itself does not change as we move it from one position or orientation to another. We could be more accurate if we tried to estimate the number of coins that would cover the total of the little bits of the closed area that were not covered. We might note that circles are not good for the measurement of area because they do not tessellate and thus there are lots of gaps. The notion that a hand can have value makes sense only in the appropriation of the coin, which has a value, as a unit for the measurement of the area of the two-dimensional image of the hand, which thus can be conferred a notional value in terms of the number of coins of a particular value that can be used to cover its area. The extensions to the activity play on this. A 5p coin has a smaller area than a 1p coin and five times the value, a £1 coin is only slightly bigger than a 1p coin but one hundred times the value! To calculate the value using 5p coins will involve either producing the sequence of multiples of five or multiplying by five. If we use the same coin to measure the area of an adult's hand we are likely to get a greater value, but if we use a different coin a smaller child's hand might be worth more than a larger adult's hand. This commentary does not, of course, exhaust all possibilities. It does demonstrate that the task might be read as involving a wide range of elements of primary school mathematics: projection of 3D objects onto a plane, the concept of area, the use non-standard units of area, conservation of area, the value of standard units in the comparison of areas, tessellation, approximation, estimation, counting, adding, multiplying and so on. Also at play in the structuring of the task are various pedagogic principles—for instance providing an initial situation to explore, objects to manipulate, extensions to pursue—familiar, perhaps, to teachers but not elaborated in the text.

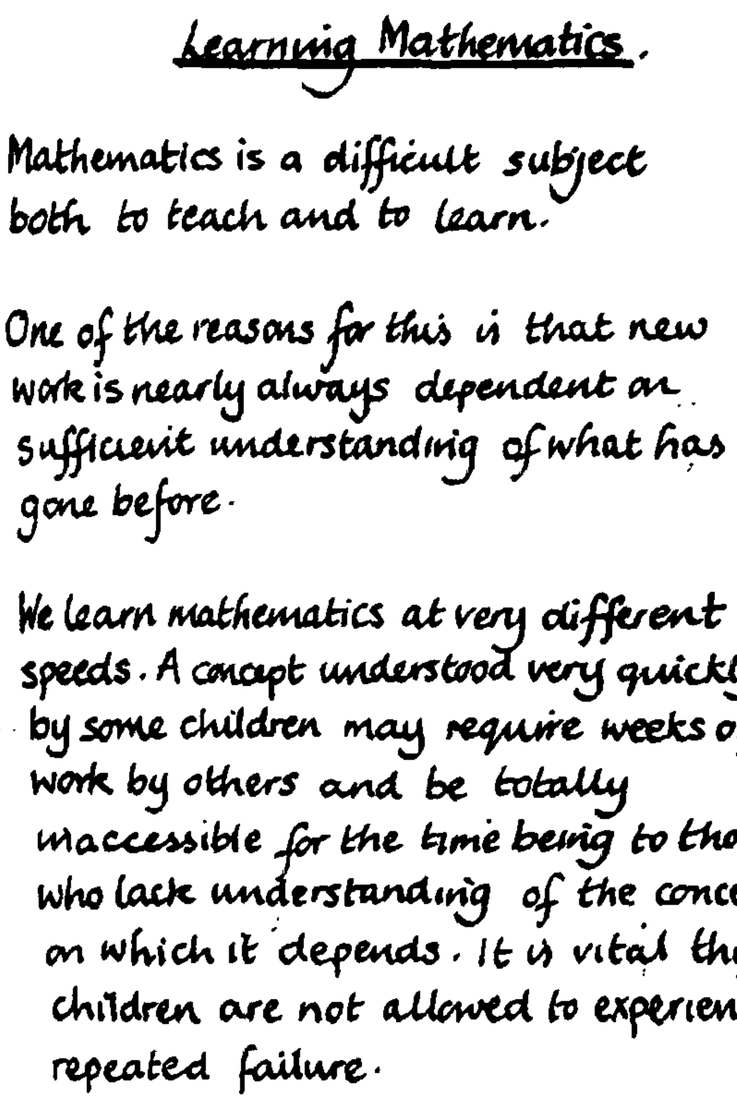
of school mathematics (and the means by which this is achieved) hold for these booklets too. The only slight divergence is in the text of booklets R3/15. Here there is some moderation of the manner in which no descriptions of the presumed domestic practices and prior pedagogic achievements of parents are given. In this text, the parents are invited to take part. This text also differs in ascribing parents greater potential agency in raising questions with the school and in legitimating the activities by referring to the National Curriculum. In this text parents are still constructed as dependent with respect to school mathematics, but clearer specialisation of sites is achieved and thus separation between home and school is maintained. It could be argued that, as a consequence, the home is not constructed to the same extent as a site to be colonised, but rather a relationship of school accountability is being established. These variations are, however, slight.

The remainder of the sample (Samples 1 and 2) bear close resemblance to the Rochfordshire booklets. One booklet, however, presents a sharp contrast. In considering this booklet in the next section, some of the points raised tentatively with reference to the text of booklets R3/15 will be taken up and discussed further.

### 5.4.3 Analysis of the Kingsgate Primary School booklet

A photocopy of the Kingsgate Primary School booklet was given to me by Ruth Merttens, Director of the IMPACT project, following a meeting with home-school advisory teachers in which the booklet had been mentioned. Kingsgate Primary is a village school with a predominantly middle class intake (a high proportion of the parents of children at the school are professionals who commute to work). The booklet had been produced by the mathematics co-ordinator at the school in consultation with other members of staff. It outlined the approach taken by the school in the teaching of mathematics and presented IMPACT as a means by which parents can assist with the mathematical education of their children. The booklet is strikingly different from the

other IMPACT booklets discussed above. The booklet had been felt to be inappropriate by the local advisory teacher and others within the county advisory service. On this basis, the school had been persuaded to stop issuing the booklet to parents. At the IMPACT meeting with advisory teachers which I attended, the Kingsgate booklet was discussed as an example of bad practice.



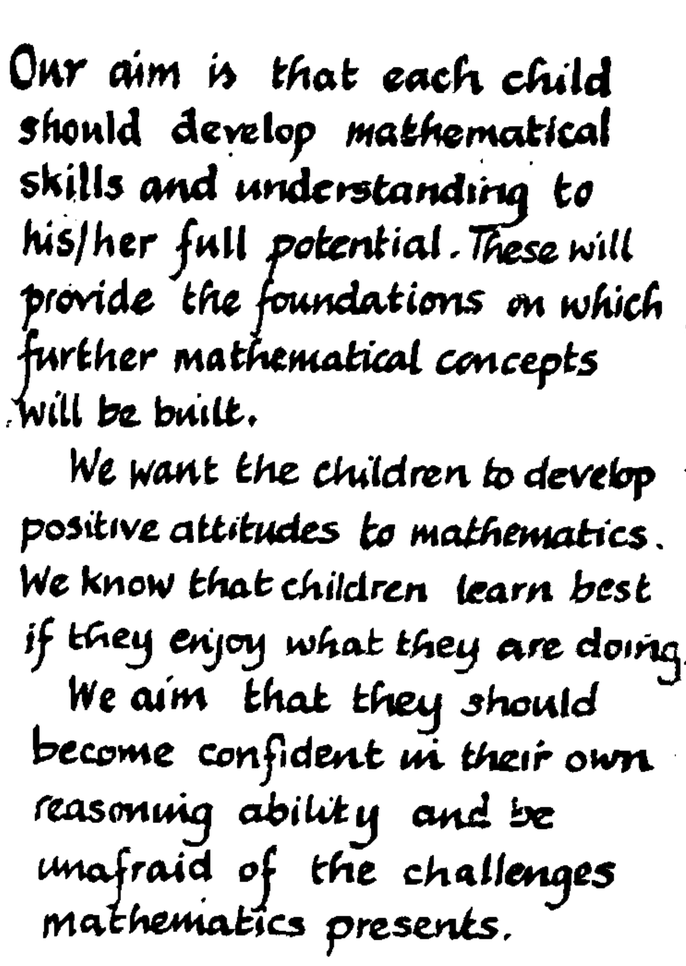
Learning Mathematics.

Mathematics is a difficult subject both to teach and to learn.

One of the reasons for this is that new work is nearly always dependent on sufficient understanding of what has gone before.

We learn mathematics at very different speeds. A concept understood very quickly by some children may require weeks of work by others and be totally inaccessible for the time being to those who lack understanding of the concepts on which it depends. It is vital that children are not allowed to experience repeated failure.

*Figure 5.10: Kingsgate booklet page 2*



Our aim is that each child should develop mathematical skills and understanding to his/her full potential. These will provide the foundations on which further mathematical concepts will be built.

We want the children to develop positive attitudes to mathematics. We know that children learn best if they enjoy what they are doing.

We aim that they should become confident in their own reasoning ability and be unafraid of the challenges mathematics presents.

*Figure 5.11: Kingsgate booklet page 5*

#### *5.4.3.1 Format and construction*

Like the other booklets, the Kingsgate booklet is A5 size and is constructed by folding a number of double sided photocopied sheets together. It is, however, considerably longer than any of the other texts. Excluding the cover, there are 22 pages of text and four pages of photographs. The text is hand-written, but densely packed (see sample pages, Figures 5.10 to 5.13). In terms of numbers of words, the text is over six times longer than any of the Rochfordshire booklets (it is 1892 words; the longest Rochfordshire booklet is 302 words, the shortest 186 words).

Some questions you may still have:-

How do teachers keep track?

We use 'Checkpoints' to assess children's understanding of each concept. Each child has a checkpoint record which ensures that progress is monitored. Older children also have a Kent Maths concept network which shows which topics the child has worked on and how well he/she has mastered them. In addition staff keep written records of children's attitudes to maths etc. All of these records are available for you to examine. Do ask if you would like to see them.

Figure 5.12: Kingsgate booklet page 13

2. If I don't see pages of sums how am I to know how my child is doing

Come and talk to staff. Ask to see your child's records. Attend maths evenings and open days. Better still, come and spend some time in school :. look at the maths equipment, workcards, and Checkpoint cards; work with your child or a group of children. You are welcome at any time.

3. Can I be sure my child is doing maths. He/she says he just plays.?

Many of our maths activities involve play. Children enjoy them and therefore learn better. The staff structure the days so that everyone does some maths even if they don't

Figure 5.13: Kingsgate booklet page 14

### *5.4.3.2 Mode of pictorial representation*

There are no cartoons or drawings on the cover, nor anywhere else in the booklet. On the first page of the booklet there are two photographs. The top photograph shows two boys in a classroom looking at a map; the lower photograph shows a girl in a classroom working at a computer. There are six further photographs in the booklet, all arranged in pairs: two facing the fifth page of the text, two facing the seventh page of text and two on the last page of the booklet. All are photographs of children in classroom settings. There is a teacher at a table doing an activity using unifix cubes with four children; a teacher on a mat doing a sorting activity with two children; a child looking at some graphs on the classroom wall; two children putting numbers on a multiplication grid; two children making a sequence with geometrical shapes; a teacher with a child who is placing into two hoops arranged on the floor to look like a Venn diagram of two intersecting sets. Thus, within the photographs there are specialised forms of indexical and symbolic representation.

In relation to the earlier discussion of the Rochfordshire booklets, there are a number of aspects of the use, the form and the content of the images that are of note. There are no representations of domestic settings. This text is very much about the school. The images are of the strongest modality—they are photographs of actual events in an actual school, Kingsgate school. The parent is positioned as looking in on the activities of the school. The teachers and children are deeply engrossed in the activities. No one is looking invitingly out of the frame, there is nothing to draw the viewer in or to suggest the current or future participation of the viewer. Rather the school is displaying what it does and is specialising the school as a pedagogic setting. The photographs show specialised equipment and particular forms of spatial and social organisation. The environment is clearly highly organised and, in three of the photographs the teacher is shown as a participant in the activity. In terms of the images presented, this text is thus silent about the home, about domestic activity, about the relationship between parents and their children and about the potential of the home in terms of school mathematics. It strongly asserts the authority of the teacher within the domain of the school and its curriculum (but not in relation to domestic activity) and the specialised nature of the work of the school. The activities shown are, with the exception of the map reading, also clearly not domestic activities as they use specialised equipment (an Acorn computer, unifix cubes, plastic or wooden geometrical shapes) and specialised forms of representation (Venn diagrams, multiplication grids, graphs), thus presenting mathematics at Kingsgate as a specialised, esoteric domain activity. Not only is the school presented as not entering the home, but the home is presented as not entering the school. Strong classification is thus maintained between home and school. Through the use of these images, teachers are asserting their authority within the setting of the school but make no claims over the nature of domestic activity. In contrast, school activity in the Rochfordshire booklets remains very much hidden from view (as does, as a

consequence, the basis for the authority of the teacher in this setting) whilst the authority of the teacher/school is extended into the domestic setting.

#### *5.4.3.3 Establishment of voice structure*

The cover of the booklet announces simply 'Maths at Kingsgate'. These words are surrounded by a black and white geometrical border. Neither IMPACT not the parent are indexed. It is only on the eighth page of the booklet that the parent is addressed ('You will know form your own lives that there is much truth in the proverb …'); prior to this the text puts forward the aims and approaches of the school ('Our aim is …', 'We want the children to …') and makes generalised statements about the nature of mathematics and how it is learnt ('We need to be able to count …', 'Maths helps to develop logical thinking …','We learn mathematics at very different speeds …'). Frequent references are made to the Cockcroft report as a source of support for statements made and other authorities are invoked to justify the approach taken by the school. For instance,

> Most schools where staff have taken notice of educational research will be working in this way. Our methods are supported by the local education authority, our local mathematics advisory team, Open University maths courses and the latest national curriculum documents. We are not alone!

Children are referred to, for the most part, in general terms (i.e. as 'children', 'the children' or 'the child'). It is only in two specific sections that reference to 'your child' is made: 'Some questions you may still have' (pages 13 to 20 in which three such references are made) and 'What can parents do?' (pages 21 to 25 in which four such references are made). As with the other booklets, the child is objectified—they are the objects of the pedagogic action of the teacher and their actions subject to the evaluative gaze of the teachers. On page 16 it states that

> We use 'Checkpoints' to assess children's understanding of each concept. Each child has a checkpoint record which ensures that progress is monitored. Older children also have a Kent Maths concept network which shows which topics the child has worked on and how well

> he/she has mastered them. In addition staff keep written records of children's attitudes to maths etc. All these records are available for you to examine,. Do ask if you would like to see them.

Here, the expertise of the teacher is presented very clearly as relating to generalised knowledge of children and the realisation of this is a range of evaluation technologies. Pedagogy is this presented as a specialised, esoteric domain. The domain of expertise of parents is less clearly marked out. What is clear is that there is an expectation of accountability of the teacher to the parent, but, in order for this to be realised, the school has to establish the specialised nature of its practice.

#### *5.4.3.4 Representation of the pedagogic potential of the home*

In stark contrast to the Rochfordshire booklets, no references are made to the prior pedagogic achievements of parents. There are no pictorial representations of the home, nor are there references to the form of relationship between parents and their children, family life or the nature of domestic activity. The only references made to the home are in the 'What can parents do?' section of the booklet. This section appears after 20 pages of exposition on the teaching of mathematics at Kingsgate school. It is stated that, as part of the IMPACT project, the school will be sending home activities 'for you to share with your child'.

#### *5.4.3.5 Representation of parental involvement*

In terms of the form of parental involvement described, there is little difference between this text and the others. 'Sharing' in the activities, 'talking', 'playing games', involving children in 'Real-life situations like cooking, shopping, sharing out the cake or sweets' are all presented as productive in terms of the mathematical development of the child. In some cases more explicit advice is given. For instance, some indication is given of the form that 'talk' might take.

> Whatever you do be positive. Avoid saying "That's wrong—do it this way". Try asking your child to explain his/her thinking. Question what is said until you understand. Then if

> there is a problem you may well be able to get to the bottom of it. Of course you may find his/her answer is just as valid as yours.

Most striking is the manner in which a rationale is presented for the activities in which parents might become involved. Games 'provide useful number skills practice in an enjoyable way'. 'Doing maths at home helps children to see its usefulness in the 'real world''. Talking to children about their methods is important because 'explaining to someone else often helps to clarify an idea' and because 'knowing how a child has done a piece of work is often more important than the answer'. Problem solving is important because 'the children need to experience the excitement, disappointments and struggle involved in finding their own solutions'.

Clearly, none of this gives parents access to the principles of the discourse of school mathematics. There is little more than an assertion by the school of the utility and effectiveness of the proposed activities and approaches, the persuasiveness of the assertion resting on acceptance of the expertise and authority of the teachers/school in the domain of school mathematics (as noted above, the major part of the booklet is given to the establishment of this authority). In common with the other booklets, there is a degree of limiting with respect to the pedagogic action of the parent in terms of settings and topics, but a lesser degree of proceduralising. There is clearly a localising of the message of school mathematics but the relationship between the school and the parent, with its emphasis on teacher accountability and self-justification, is distinctive.

#### *5.4.3.6 Representation of school mathematics*

A clear career through school mathematics is mapped out for the child. The opening statement in the booklet is:

> Our aim is that each child should develop mathematical skills and understanding to his/her full potential. These will provide the foundations on which further mathematical concepts will be built.

The work of the primary school in fostering mathematical development in turn builds on prior development: 'What children learn in school about mathematics is not the beginning but a continuation of the development of mathematical thinking'. What is learnt at primary school feeds into secondary schooling ('We have shared our materials and methods with out partner secondary school … Our children are well able to cope with the materials and methods used there.') and on into adulthood ('Maths is useful for adult life.'). There are references to 'stages' of development ('We prefer to think in stages'). Progressions are mapped out in particular aspects of the curriculum, for instance:

> For young children the doing and talking is often enough …Gradually they will develop ways of recording … These will, as the children develop, become a 'shorthand' and finally the abstract record using symbols.

The presentation of a career through schooling and of sequences within discrete areas of the curriculum enables fine distinctions to be made between individual children (hence the need for elaborate evaluation, assessment, recording and reporting techniques). It is stated, for instance, that 'A concept understood very quickly by some children may require weeks of work by others' and that 'Our checkpoint records have A, B and C stages for each mathematical topic … your child may well achieve stage C in one topic before mastering stage B in another' and that 'The secondary schools cater for a range of abilities too'.

Examples of the content of school mathematics curriculum are presented, for instance:

> Place Value—they will work with number apparatus (Dienes or Tillich blocks) until they have an understanding of place value. This will go hand in hand with encouraging the rapid recall of number facts and eventually lead to more abstract computation.

The major emphasis is, however, on the elaboration of an approach to the teaching of mathematics. Under the heading 'Maths in School' it is stated that 'All the mathematics is based on a framework of "Do, talk and record"'. The dispositions of children

towards mathematics also have a high profile. Reference is made throughout the booklet to 'enjoyment', 'confidence' and 'positive attitudes'.

The booklet clearly elaborates a particular theory of instruction, the principles of which are made partially available to the parents. Little attempt is being made directly to project school mathematics into domestic space or to appropriate the home as a secondary site for the elaboration of school mathematics and the parent as an agent of the school in the manner of the Rochfordshire booklets. The school is rather marking out its expertise and marketing its approach to mathematics. Parents are invited to join with the school in the fulfilment of its mission. The final page of the booklet states:

> We want to ensure that your children grow up with a positive attitude to maths, a real understanding of mathematical concepts and an awareness of the value of maths in their lives outside the classroom. We would like you to work with us towards this goal.

This invitation draws a clear boundary between home/parent and school/teacher. In order for the alliance to be struck, the school has to demonstrate what it is doing and why. To this end, the parent is invited into the school.

> Come and talk to staff. Ask to see your child's record. Attend maths evenings and open days. Better still, come and spend some time in school: look at the maths equipment, workcards and Checkpoint cards; work with your child or a group of children. You are welcome at any time.

#### *5.4.3.7 Conclusion*

The analysis of the Kingsgate booklet given above draws out a number contrasts with the other booklets in the sample. The dense text with its professional language, elaboration of the school's approach to mathematics and photographs of classroom activity set it aside immediately from the Tanwood booklet and the others from the Rochfordshire sample. Rather than address domestic settings, and their associated practices, as potential (or, indeed, necessary) sites for the elaboration of school mathematics, the Kingsgate booklet elaborates the practices of the school as they relate to primary mathematics. This maintains the school and the home as separate, each with

its own distinct forms of practice. The educational ideology of the school is clearly outlined and particular pedagogic practices related to this. Possible tensions with domestic practices are directly addressed (rather than consonance between home and school assumed). In this sense, the text could be described as *marketing* the school to the parent, rather than establishing a *pedagogic* relationship. The booklet provides information which clearly marks out what the school is trying to do, how it is attempting to do this and identifies where the particular expertise of the teacher lies. Where advice is given to parents, this can be seen as enabling them to get best value from the school. Given the predominantly middle class nature of the school's intake, this might be seen as appropriate and as matching the form of relationship established between middle class parents and schooling (see, for instance, the research on school selection reviewed in the previous chapter). Within the ideology of the IMPACT project, however, this is not viewed as appropriate, hence the withdrawal of the booklet. There are thus clear class assumptions embedded within the form and content of the booklet, as there are in the other booklets analysed in this chapter.

With respect to the analysis of booklets presented in this chapter, the Kingsgate booklet serves to demonstrate that not all booklets need to be, or indeed are, of the form taken by the Rochfordshire booklets. That it is the only booklet in the sample that deviates substantially from the form and content of the Tanwood booklet, further strengthens the statements that can be made about the manner in which parents and domestic activity are constructed within the IMPACT project. The analysis of the booklet also throws some light on the minor differences in the texts of the Rochfordshire booklets. In particular, it is possible to see the text of booklets R3/15 as moving part way to operating within a market rather than pedagogic relationship with the parents.

## 5.5 Conclusion

The analysis presented in this chapter has demonstrated that there is a remarkable consistency in the form and content of booklets produced by schools for parents within the IMPACT project. The sampling strategy was designed to generate a collection of booklets that was representative of the project at the time at which the study was carried out (e.g. by collecting all the booklets from one LEA as well as through mail-outs from the IMPACT office and through IMPACT meetings). In addition, booklets that did not conform to the prevailing form of booklet were actively sought out. The analysis presented above initially focuses on the booklets from one LEA (which I have called Rochfordshire). These booklets represent the dominant form of text. Only very slight variations are found within the sample. Following this, the booklet from the wider sample that provides the most striking contrast is analysed. This exemplifies a form of relationship between parent/home and teacher/school that is very different from that sanctioned by the IMPACT project and implicit in its practices.

A semiotic form of analysis has been adopted. This has drawn on the language for the analysis of pedagogic texts developed by Dowling. This form of analysis has enabled me to identify the voice structure established by the texts and to describe how the message of school mathematics is distributed across the voices. It is argued that the booklets position the parent as subordinate to the teacher. In their attempt to valorise domestic and local pedagogic practice, they present the pedagogic action of parents as exhausted in the development of basic pre-school competences and now all but redundant. The expertise of the parents is presented as highly localised and relating primarily to knowledge of their own children. The form of participation offered to parents is severely limited in scope. They are asked to work alongside their children on activities that are selected and prepared at school. The principles underlying the construction and evaluation of these school mathematics tasks and their outcomes are

not elaborated. These are presented as residing with the teacher/school. No pedagogical or mathematical knowledge on the part of the parent is presumed—to the contrary, it is implied that to have such knowledge could have an inhibiting effect on the effective realisation of the task. The home is presented as a potential secondary site for the elaboration of school mathematics, with the child as the carrier of the pedagogic message and the object of pedagogic action and the parent as providing localised regulation of the realisation of the task. The parent, too, is clearly the object of the pedagogic action of the school. This is an implicit pedagogic relation in that the criteria for the construction, realisation and evaluation of pedagogic action are not made visible to the acquirer (in this case the parent). Parents are just given procedural instructions to guide their engagement with the task (do this, don't do that). The form of pedagogic relation which the project is attempting to establish within the home is also implicit. Within the desired form of pedagogic action there is no attempt to make visible the principles of construction of the discourse to the child, not least because there is no attempt to make these visible to the parent (although this is not to say that the parent does not have access to the principles of construction of the discourse). This, of course, raises the question of the extent to which the principles of construction of the discourse are indeed available to the teacher.

I wish to highlight two issues arising from this discussion, both of which will be addressed in the subsequent studies. Firstly, the booklets clearly homogenise parents. Parents are positioned in particular ways with respect to the school and are presented as having particular expertise (or lack of expertise) and are assigned to particular legitimate forms of pedagogic activity. This neglects differences in the form and range of discursive resources that are available to parents, differences in the local pedagogic practice of parents and differences in the strategies they deploy in positioning themselves with respect to the school. The manner in which this is addressed in the Kingsgate booklet is clearly different. Here the relationship between parent/home and

teacher/school relationship is embedded in a market relation that is at odds with the ideology of the IMPACT project. The school is marketing a particular form of pedagogic relation and the expertise of its teachers in realising this form of pedagogic action. Little attempt is made here to induct the parent into these practices; it is rather an attempt to inform them of what form they take and establish their effectiveness.

Secondly, Bernstein has long alerted us to the social class basis of the assumptions underlying forms of pedagogic action and the differentiating effects of the establishment of particular forms of pedagogic relation (see, for instance, Bernstein, 1977). For instance, the form of pedagogy sanctioned in the booklets places the child's everyday domestic activity and play as a legitimate activities in their mathematical development. The child's, and the parent's, everyday activities are recognised and, indeed, colonised by school mathematics. Sequencing rules and criteria are not made visible to the child and may not be accessible in any clear way to the parent. In addition, at the level of rhetoric, the boundary between work and play is weakened. What parents might have thought of as work (school mathematics) is in fact play (fun) and vice versa. Playing games with their children, and everyday activities, such as getting the children ready for bed, in fact have potential as opportunities for pedagogic work. As Bernstein has argued, and this is borne out by Lareau's empirical work, discussed in the previous chapter, not only is the boundary between work and play likely to be more firmly drawn in working class families than in some fractions of the middle class, but the basis of the proposed pedagogic relation lies in the culture and material conditions of this group. Initiatives that revolve around attempts to establish this form of pedagogic relation within all homes are thus likely to favour these groups, particularly in the early years of schooling. It has also been noted that implicit pedagogic relations only have limited currency for the educationally ambitious. As children approach formal selection through examination, the demands of middle class parents turn to the establishment of explicit pedagogic relations, with explicit hierarchy, explicit sequencing rules and explicit

criteria. If this is the case, the establishment of implicit pedagogic relations in all homes, through initiatives such as IMPACT, will act to advantage further those parents who have a successful track record in shifting their pedagogic affiliations according the age of the child and interacting with teachers, schools and their practices in such a way as to meet their own ends (see the study by Cohen, 1981, for an example of this).

It is tempting to dismiss the booklets produced for parents by schools as patronising. This is to miss the point. The question is, to what extent could the booklets be any different? Texts are the product of, and act to produce, particular sets of social and pedagogic relations. Booklets such as the ones discussed in this chapter are produced by schools in a genuine attempt to communicate with parents. This takes place within pre-existing sets of social and pedagogic relations. These are not, as we have seen from the possibility of the Kingsgate booklet, uniform. Whilst we must be open to the possibilities for the transformation of these social relations, it will clearly take more than the establishment of limited forms parental participation and dialogue. The analysis presented in this chapter, it is hoped, makes some contribution to understanding how initiatives that operate without this critical awareness can act to (re)produce these pre-existing sets of social relations.

# Chapter 6 Social class variation in parental positioning: an analysis of IMPACT diaries

## 6.1 Introduction

The study reported in this chapter advances the sociological description of relations between parents and teachers and between school and home by focusing on the information relayed from home to school through the medium of the IMPACT diary (see Chapter 2 for a description of the use of diaries, completed by parents and children, in the IMPACT process). The analysis in Chapter 5 looked just at statements made by teachers and materials produced by teachers. This focused on the manner in which parents are positioned in relation to the practices of schooling and how the message of school mathematics is distributed. The study reported in this chapter shifts perspective on these questions and looks at how the parents position themselves and their children in relation to the practices of primary school mathematics teaching. The IMPACT project has been presented as opening up a particular space for parents—this chapter will start to explore how the manner in which parents operate within this space relates to social class and existing social relations. In order to do this a sample of completed IMPACT diaries was collected from four schools serving areas with contrasting social class characteristics. A scheme for the classification of comments made by parents was developed and the distribution of forms of comments between the samples from the three schools were compared.

## 6.2 Dialogue through diaries

As described in Chapter 2, a teacher taking part in IMPACT will send home a task for children to do with their parents either once a fortnight or once a week. Each task will be an integral part of the on-going mathematical work of the class and the children will be prepared for carrying out the task by the teacher before taking it home. On completing the task together the parent and child are asked to fill out a response sheet or make an entry in a diary in which they can tell the teacher something about the task or their engagement in the task (precisely what parents choose to write is the major concern of this study). A page from the standard IMPACT diary[4] is shown in Figure 6.1. As can be seen the response from the parent and child will be in the form a selection from a range of multiple choice items plus a written comment. It is the presence or absence of a written comment and the form of the comments made that are of particular interest in this study.

The parental responses are intended to act both as the basis for a written dialogue to develop between the parent and the teacher and for parents to relay information to the school regarding the performance of their child, their own opinions about the tasks and, more generally, about school mathematics, and so on. It is the aim of the IMPACT project not only to enable the voice of the parent (or rather the voices of parents) to be heard but also to create a mechanism for the problematisation and even transformation of school practices[5].

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[4] This particular page is from the standard IMPACT diary which can be purchased by schools from the project. As mentioned in Chapter 2, schools can, if they wish, design their own diary or 'response sheet'.

[5] This 'empowering' strand of the project is more to the fore in early writing about the project (see Merttens & Vass, 1987a & 1987b, for instance). In more recent writing about the project, the transformational potential of the dialogue between parents and teachers is viewed as being based on enabling parents to feed information into the school which contributes to the assessment of their children (see Woods & Merttens, 1994).

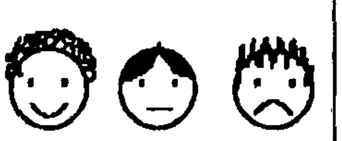
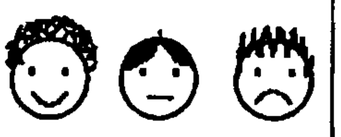
| Name of Activity | PARENT: Was IMPACT enjoyable? | PARENT: Was it too hard? | CHILD: Did you like your IMPACT? | CHILD: How much did you learn? | Comments |
|---|---|---|---|---|---|
| | Great fun ☐<br>All Right ☐<br>Not much fun ☐ | Too hard ☐<br>Too easy ☐<br>Just right ☐ | a lot / a little / not much  | a lot / a little / not much  | |
| | Great fun ☐<br>All Right ☐<br>Not much fun ☐ | Too hard ☐<br>Too easy ☐<br>Just right ☐ | a lot / a little / not much  | a lot / a little / not much  | |
| | Great fun ☐<br>All Right ☐<br>Not much fun ☐ | Too hard ☐<br>Too easy ☐<br>Just right ☐ | a lot / a little / not much  | a lot / a little / not much  | |
| | Great fun ☐<br>All Right ☐<br>Not much fun ☐ | Too hard ☐<br>Too easy ☐<br>Just right ☐ | a lot / a little / not much  | a lot / a little / not much  | |

*Figure 6.1: A page from an IMPACT diary*

The written exchanges between parents and teachers (and sometimes children and teachers) that take place within the diaries are thus central to IMPACT, not least in the legitimation of the transformative potential of the project[6]. They are certainly vital to the claim that parents will feed information in to the mathematics assessment of the child[7]. Thus for the full aims of the project to be realised the parents have to do more than just carry out the tasks with their children. Just doing the tasks might have the desired effects in terms of changes in the child's orientation to mathematics or their mathematical competence, or in terms of changes in the practices of the parent within the home or their perceptions of school mathematics. This would constitute a one way

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[6] Although now largely identified as a school based initiative, IMPACT started life as a community based project. To the extent that there are now thousands of teachers taking part in IMPACT, the project itself has actually been hugely successful in transforming school practices. The question remains, to what effect and in whose interests are the changes that have taken place?

process, a transmission of practices from school to home, with limited and largely unarticulated feedback from home to school through the subsequent performance and disposition of the child within the school setting. More explicit relaying of messages from the home to the school would be necessary for the desired transformation of school practices to take place, whether locally in relation to the particular child of a particular parent or in terms of more general classroom practices. Of course relaying of these messages does not guarantee the transformation of school practices.

It is the shared nature of the realisation of the task (with parent and child working together) and two way nature of the communication set up by IMPACT that acts to distinguish 'doing IMPACT' from 'doing homework'[8]. In discussing the difference between IMPACT and traditional homework Woods & Merttens claim, for example, that:

> The mechanism represented by the diary, embedded in the IMPACT approach, differs from traditional homework in two ways:
>
> 1. The activities or tasks undertaken at home are shared by adult and child, with the child acting as tutor to the task-naive adult. The results of these are then fed back into maths teaching in the classroom. **This supplies a mechanism whereby what is done at home, by parents with their children, can have a direct influence upon the classroom curriculum.**
>
> 2. Parents' and children's comments are invited on the suitability of the task and the child's progress. **This allows parent or child to influence both assessment records and future school work.**
>
> (Woods & Merttens, 1994, p. 15, emphasis in original)

The analysis of the forms of comment made by parents and the types of exchanges that take place within the diaries is obviously important to the IMPACT project in examining

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[7] See the IMPACT Process Pack published by the IMPACT Project.

[8] In its earliest incarnation, more attention was given to distinguishing between IMPACT and homework. Recently, with changes in the general educational and political context and the move to the commercial publication of IMPACT activities by Scholastic Press from 1993 onwards, the distinction has become less clear. On the back of the Scholastic activity books IMPACT is described as 'a

the extent to which its aims are met and the processes by which this might happen. One such study has been conducted by Woods & Merttens (1994), discussed in detail below, who analyse diaries collected from four schools with differing social class characteristics and classify the comments made parents. They claim that the data analysed 'indicate an active involvement by parents and children in commenting on activities and a willingness to make assessments of progress in maths' (p. 22).

For somewhat different reasons, the analysis of the relaying of messages from the parent to the teacher is also an important element in this thesis. The previous stage of the research has looked at parents as 'discursive' or 'textual' subjects. It has looked at how 'the parent' is positioned through the analysis of texts produced for parents and has pointed to the homogenised image presented of parents and their relations to schooling. The study reported in this chapter builds on this earlier work but differs in that the diaries bring the constructions of teachers in direct contact with the statements of 'actual' parents. The nature of the sample enables to investigate the manner in which parents from different social class backgrounds enter and operate within the spaces opened up by the IMPACT project.

## 6.3 The Parent-Teacher Dialogue Research Project

The data being analysed in this chapter, a sample of diaries from four IMPACT schools, overlaps substantially with that analysed by Woods & Merttens (1994)[9]. Whilst these studies have been carried out for different purposes and the analyses informed by different theoretical frameworks, it is worthwhile giving brief consideration to their study, both because they are looking at the same data and because they too claim to be

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successful homework programme'; in the text inside the books it is described as a 'non-traditional homework scheme'. (p. 5).

[9] I am indebted to Ruth Merttens for making this material (and extensive additional material) available to me for further analysis.

looking at these materials as sociologists (ibid., p.14) although their concerns are clearly different from those of this thesis. The resulting comparisons that can be made are productive.

In 1993-4, as part of the IMPACT initiated Parent-Teacher Dialogue Research Project, 296 completed diaries were collected from four schools with a long-standing involvement with IMPACT. These were analysed in order to be able to produce statements about both the frequency and form of the responses made by parents. In addition to the production of a number of empirically derived statements, initial steps were made in the development of a theoretical framework which it is claimed 'appears set to offer a purchase on both the causes and explanations of the success of IMPACT' (ibid., p. 27).

The theory of 'learning congruence' put forward by Woods & Merttens can be summarised in the following propositions:

(i) home and school constitute two separate (but inter-penetrating) learning contexts;

(ii) whilst these can be considered different neither one can be considered superior to the other in terms of 'learning outcomes';

(iii) as a learning context the home of a child from a 'lower socio-economic group' and the school context are 'orthogonal' to each other;

(iv) the home and school learning contexts can be 'brought into line' (into a state of 'learning congruence') through the kinds of parental participation and teacher-parent dialogue that are provided by home-school intervention projects such as PACT, IMPACT and Headstart;

(v) the school type activities in which parent and child engage in the home enable the parent to be able to 'mark' activities within the home as being 'mathematical' (in the case of IMPACT) thus allowing the school to transform the home by demonstrating that activities in the home 'have a place' in the school derived learning hierarchy.

(vi) it is possible that the practices of the school might also be 'punctuated' by those of the home in bringing the two learning contexts into line.

The authors do not propose a direct relationship between this emerging theory and the empirical work reported. The theory is, rather, at too high a level to be translated into a

set of principles for the analysis of the statements in the diaries as it addresses the home and the school as contexts for the realisation of mathematical activities in general terms. This distance between the theory and the data also makes it difficult to draw on the analysis of data to support or challenge the theoretical statements that are made. The theory and the analysis of the diaries are thus largely independent.

The one comment that does directly relate the theory to the data concerns the expectation that in IMPACT schools there will be a high level of 'congruence' between the home and the school as learning contexts and thus a high frequency of responses (using the diaries) would be expected from families taking part. The data gathered does not, however, enable any comparison to be made with other forms of intervention. It could thus be that those initiatives that do not attempt to project school type practices into the home would also attract high levels of parental responses (although the forms of responses would obviously be very different given the different nature of the endeavour). There are other statements made that would be strengthened by reference to an empirical base. These refer to details of parent-child interaction within home-school partnership projects and to the manner in which IMPACT and some other initiatives that attempt to involve parents in the education of their children have been 'spectacularly successful in terms of children's performances within the education system' (ibid., p. 12). Unfortunately the empirical work reported by Woods & Merttens cannot address either of these questions.

One key area that is in need of development if the theory is to be brought under scrutiny through engagement with empirical data, is the derivation of criteria for judging whether or not the home and the school are 'orthogonal' as learning contexts. It is implied, for instance, that it is the homes of children from 'lower socio-economic backgrounds' that are not aligned with the school in some way. It is not clear, however, what exactly it is that is not aligned. Is it the form of discourse between parent and child in the home and the teacher and child in the school; the interactional practices of parents

and those of teachers; the local pedagogic practices of the home and the official pedagogic practices of the school? What is it that causes this lack of alignment? Are the homes of those not in the 'lower socio-economic backgrounds' category necessarily aligned? Is this culture independent? Is the congruence of a middle class Asian or African-Caribbean home assured? Is the difference materially based, based on the educational level of the parents, based on the occupational classification of the mother or father? What precisely are the indicators of alignment? What is the relationship between the features of the school context and attainment? Does the alignment of the school context with the home context, whatever this may mean, maximise the possibilities for high attainment of the children irrespective of the nature of the pedagogic and interactional practices of the school and the home? The theory is put forward by Woods & Merttens as being in the early stages of development. The questions raised here indicate some of the areas that, from my perspective, are in need of further attention. Whilst the focus of this theory on the home and the school as contexts for the elaboration of school mathematics differs from my own interest in the social organisation of domestic and school practices, there is some similarity in the spatial metaphors employed. I will return to this later.

Completed diaries from the four schools constitute the data to be analysed by Woods & Merttens. The analysis proceeds by classification of the multiple choice items as positive or negative (where appropriate), classification of the open comments made by parents as concerning either 'assessment', 'maths', 'pedagogy/teacher' or 'other', and the classification of activities as 'number', 'measure', 'shape' or 'data handling'. Tables summarising the data according to school are given and the following findings are reported:

(i) response rates using the multiple choice questions were consistently high (ranging from 91% to 100%);

(ii) the open comment boxes were used by parents very frequently in one school (for 92.4% of the activities), fairly frequently in two schools (64.8% and 66.2%) and rarely in the fourth school (11.5%).

(iii) the majority of comments made fell into the assessment category (between 54.3% and 86% of the comments in the three schools in which the comment box was most frequently completed).

(iv) there was a high proportion of positive responses to the multiple choice questions across the sample but some variation between schools;

(v) there was a higher proportion of 'strings' of positive responses (i.e. a set of positive responses across all the multiple choice items dealing with enjoyment, difficulty and amount learnt) for number activities than for the other types of activities across the sample, although again there was some variation between schools.

The coding of the comments given by parents, children and teachers in the open comment boxes is of particular interest. There are a number of distinct differences in the approach to coding taken by Woods & Merttens and the approach taken in the analysis presented in this chapter. Their categories are very broad and loosely defined which means that within any given category there is a very wide range of different kinds of statements. This is exacerbated by ascribing just one code to the entry into each box. An entry receiving a single code can thus vary between one word and several lines of text.

In terms of the findings reported and conclusions drawn the *assessment* category is particularly important. The criteria for the recognition of an assessment comment are given as: 'commenting on the child's progress, whether they found the activity too easy or too hard, how the activity went in terms of difficulty etc.' (ibid., p.19). The looseness of the definition of this category not only allows a diversity of forms of statement to receive the same code but it also makes it difficult to code the comments with any reliability. The following statements are, for example, coded as being about assessment:

'Rather boring'

'Ben really enjoyed this activity. He estimated quite closely on most of the items. When estimating the number of videos he had the idea that if 2 videos fitted on the book and 13 books fitted on the paper then 26 videos would fit on the paper. Unfortunately because of small fractions his answer was inaccurate, which was a bit disappointing for him.'

On the other hand the following two comments were placed in different categories:

'John liked his IMPACT' (assessment)

'John enjoyed this activity' (other)

Similarly the comment 'very enjoyable' was coded as *assessment* in some cases and *other* in others. As each coded statement constitutes the entire comment for a particular activity, there is no contextual information which might lead to the statement being read by the analyst in two different ways. It is difficult to get to grips with how these distinctions are made.

In addition to these questions of reliability there is also a need, from my perspective, to address the face validity of the *assessment* category. In the analysis being carried out by Woods & Merttens, it is the subject of the statement that is being categorised. To treat a statement as, for instance, an indicator of an assessment judgement having been made would not be consistent with the other categories (which are statements concerning *maths*, statements concerning *pedagogy*, and *other* statements). There is some doubt, however, as to whether many of the statements that fall into this category can reasonably be considered to be assessments of the type that would be made by a teacher or would be recognisable as an assessment in a school setting.

Would the statement 'it was fun' be considered an assessment, for instance? This statement tells a teacher little about the mathematical competence of the child. Similarly the judgement that an activity is 'too hard' for a child says little in itself to a teacher. They need to be able to make judgements about the causes of the difficulty which in turn presupposes access to the underlying principles of construction of the activity and to a set of indicators that are related directly to fundamental skills, knowledges or strategies in school mathematics[10]. This question leads us to look more closely at precisely the kinds of comments that are made by the parent. Is there any significant variation in the

forms of comments that are made under the heading of *assessment comments*? Do the comments demonstrate that the parent is saying anything more than 'the activity worked' or 'it didn't work'?

That a high proportion of the comments made can validly and reliably classified as 'assessment comments' is of central importance to the conclusions that are drawn from the analysis by Woods & Merttens. These can be summarised as follows:

(i) parents do take the time to comment on the activities and thus go beyond just taking part in the activity itself;

(ii) high levels of participation and high frequency of assessment comments indicate 'a confidence and increasing familiarity with the terminology, structure and ingredients of school-maths tasks' (ibid., p. 27);

(iii) parents largely make assessment comments and thus play a part in both fostering the children's progression and feed information into the teacher's summative assessment of the child;

(iv) the high frequency of positive responses indicates 'comfortableness with the IMPACT tasks' and the roles these create for parents and children which in turn indicates the degree of 'inter-penetration between the school maths and the home learning context' (ibid., p. 27).

(v) variation between schools in terms of frequency of responses, frequency of positive responses and distribution of types of responses according to type of activity are likely to be due to differences in the manner in which teachers administer IMPACT;

(vi) a high rate of response by parents is an indicator of a high level of 'congruence' between the home and school contexts as learning environments.

Woods & Merttens present this work as exploratory and the result of a preliminary analysis[11]. As befits an exploratory piece of research a number of questions arise from critical consideration of the data, the mode of analysis, the theoretical framework developed and the resulting statements made.

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[10] It may be that the limited mathematical knowledge of some non-specialist primary teachers (see for instance Carré & Ernest, 1993) might also lead to difficulties in producing assessments of this sort.

[11] It is now seems unlikely that the subsequent analyses that were planned will actually be carried out.

## 6.4 Analysis of the diaries

### 6.4.1 SAMPLE

A total of 294 diaries, collected from four primary schools, were obtained from the IMPACT project. Of these, 206 diaries formed part of the sample used in the Woods & Merttens study mentioned above[12]. The additional 88 diaries were sent to the IMPACT project for analysis by one of the schools but arrived too late for inclusion in the Woods & Merttens study. One of the four schools sent only 16 diaries. In these there were no parent comments at all (i.e. only the multiple choice items were used by parents). They were thus of limited interest for the current study and were not included in the sample[13]. The intake characteristics of the three remaining schools, as judged by Woods & Merttens, are given in Table 6.1. The pseudonyms for schools used by Woods & Merttens are retained.

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[12] The diaries analysed by Woods & Merttens totalled 296. The differences in the numbers of diaries in the sample used by Woods & Merttens and the present study is due, in part, to the way in which the diaries are counted. Woods & Merttens have counted each individual diary as one unit, even if one child has more than one diary in the course of a particular term. I have counted all the diaries produced by one child in one term as a single diary. This only has an effect on the figures for East Wood (as this is the only school in which the number of tasks set in none term exceeded the space available in the diary). The 80 diaries analysed by Woods & Merttens represents the work of one class of children doing an IMPACT activity every week for a term. The number of diaries used per child varies between one (for a child who, for instance, has not, for some reason, completed all the tasks) and three (for a child, for instance, who has completed all the tasks and whose parents have made very lengthy comments)

[13] This school, Monarch Primary School, was described as a county primary school situated in small town and with a working class, ethnically mixed intake. Of the four schools, this school, from the names of the children and the location of the school, would appear to have significantly higher proportion of children and parents for whom English is not the first language. Given the importance of dialogue between home and school in the IMPACT process and the nature of the statements made by teachers elsewhere in this study about parents who do not enter into dialogue with the school, the significance of the 'non-response' needs to be taken seriously.

| | School type and location | Social characteristics of intake |
|---|---|---|
| East Wood | county primary school in village | middle and working class, white |
| Beech | voluntary aided C of E primary school in market town | lower middle and upper working class, white |
| Chambers | voluntary aided C of E primary school in inner city | working class, ethnically mixed |

*Table 6.1: Intake characteristics of the diary schools*

The judgements made by Woods & Merttens were checked by visiting the locality of the schools. The housing in the areas around each school indicated that the judgements made by Woods & Merttens were broadly accurate. Whilst both Beech and Chambers draw children predominantly from their immediate locality, as church schools some children come from outside the area around the school. The intake for Chambers, whilst being ethnically mixed, is predominantly white, with children from African-Caribbean backgrounds being the next largest group. Data regarding the precise social class characteristics of the intake to each school, whilst desirable, is not necessary for this study. What is important is that there is a clear contrast between schools in the sample in terms of the social class of the school population. In this case there is a difference between East Wood and Beech (with a mixed social composition) on one hand and Chambers (with a predominantly working class social composition) on the other.

The distribution of the diaries available from the three schools is as follows:

| | diaries | no. of classes | age range |
|---|---|---|---|
| East Wood | 97 | 3 | R-Y2 |
| Beech | 62 | 2 | R/Y1 |
| Chambers | 107 | 4 | Y3-Y6 |

*Table 6.2:Diaries available for analysis*

The diaries collected from each class represent one term of IMPACT work. Thus, the 97 diaries collected from East Wood relate to IMPACT tasks carried out by three classes, spanning the range of Reception through to Year 2, over a period of one term. The table above indicates that there are differences between the schools in terms of average class size. They also vary in the frequency with which IMPACT tasks are set (see Table 3 below).

For the purposes of the detailed comparative analysis presented below, a sample was drawn from the diaries available. Diaries from two classes in each school were selected. As earlier IMPACT research (Merttens & Vass, 1990) suggests that levels of participation of parents decrease as children get older, it was decided to analyse diaries from those classes that are closest in age. The resulting sample is given in Table 6.3.

| | classes | diaries | tasks | potential comments | actual comments | actual: potential (%) |
|---|---|---|---|---|---|---|
| East Wood | Y1 | 27 | 8 | 216 | 192 | 89 |
| | Y2 | 29 | 8 | 232 | 210 | 91 |
| Beech | R/Y1 | 32 | 3 | 96 | 64 | 64 |
| | R/Y1 | 30 | 3 | 90 | 50 | 50 |
| Chambers | Y3 | 28 | 7 | 196 | 130 | 66 |
| | Y4 | 26 | 7 | 182 | 117 | 64 |

*Table 6.3: Description of the diary sample*

For each of the school classes the number of diaries corresponds to the number of children in the class. The number of tasks is the number of IMPACT tasks sent home in a particular term. Multiplying the number of children/diaries by the number of tasks gives the number of comments boxes in which the parents could make a entry (potential comments). The 'actual comments' column shows the number of comment boxes in

which parents actually make an entry. An indication of the extent to which parents make comments is given in the final column as a ratio between the actual and potential comments, expressed as a percentage.

### 6.4.2 Process of analysis

The purpose of this analysis is to produce a systematic and theoretically informed description of the diaries that is sufficiently delicate to allow us to account for the diversity of the responses made by parents and relate these differences to the production and reproduction of social relations. In relation to the earlier analysis the key empirical questions here are: what do parents relay to the school in making their comments and how do they do this? The structuring of the sample along lines of social class enables exploration of possible social class based differences in the form and content of the comments made.

To this point the term 'comment' has been used to stand for an entire entry in the comment box of the diary (as in the Woods & Merttens study and the IMPACT literature more widely). For the purpose of my analysis, the contents of these boxes are broken down into discrete semantic units. In my analysis the term 'comment' will be used to describe a semantic unit in which something is said about a particular subject or topic (present or inferred). This is somewhat similar to the definition of an utterance as a combination of *theme* (the subject of an utterance) and *rheme* (what is said about the subject) used by Prague School linguists (see Halliday, 1985). In the process of analysis, each comment has to be ascribed meaning in terms of the analytic network being used.

The networks that are developed in the analysis of the diary comments (and, later, in the analysis of interview data) resemble the form of semantic network proposed by Halliday and, in the context of sociological analysis, developed by Bernstein and colleagues (see Bernstein, 1973). Halliday is interested in the relationship between the

*semantic options* available to speakers and *situation types* (i.e. specific social contexts and behavioural settings, such as, say, consultations between parents and teachers or between doctors and patients) in which language is used. Semantic networks are a way of representing these semantic options. As Turner (1973) states:

> For a any one such situation type, Halliday argues, it is possible to identify a 'meaning potential', that is, the range of semantic options available to the speaker in the context of the particular situation type. The semantic options available are represented in the form of a network, the network being a device for showing how the options are systematically related to each other. A salient characteristic of the semantic network is that it is open-ended; it permits one to represent finer and finer distinction in meaning. The point at which it is no longer necessary to make further differentiations in meaning is determined by the type of problem that is being investigated. (Turner, 1973, p.144)

The process adopted in the analysis of the diaries was to work through a cross-section of the diaries and draw up a network for the classification of the responses. This network must be able to account for as many of the comments as is possible and be sensitive enough to address the central issues of this research. The process of analysis is dialogic, with constant movement between theory and the empirical data by means of the development of a theoretically motivated descriptive framework. This framework constitutes a step in the development of a set of principles of description of the empirical data (see Bernstein, 1990, 1996). In practice this involves the time consuming process of shuttling back and forth through the diaries, adapting the analytic framework, coding and recoding. Additional diaries were worked through in a similar manner and the classification scheme modified to be able to account for the comments made. Once the network was in its final form all the diaries were analysed. In its final form, this network represents a system of semantic possibilities that can be used to describe the comments made in the diaries by parents.

Returning to the unit of coding, a single response made by a parent, such as 'it was fun', is coded as one comment. Longer responses are treated as several comments, each of which represents a particular semantic selection on the part of the parent and each of which will be coded. For example, the following response consists of five comments.

> Tim enjoyed this game. / He made very few mistakes. / He can mentally add small numbers together/ after that he uses his fingers or the marks on the cards. / Tim insisted on having a go with 4 and even 5 cards.

In responses like these it is unlikely that anything smaller than a clause would be codable.

In order to check the reliability with which the coding scheme can be applied, two independent coders (primary teachers taking a masters degree in primary education) were taught to use the network. Following a training programme[14], the extent to which the coders could apply the network to sections of data drawn randomly from the corpus was tested. The level of agreement between the researcher and the two additional coders was 92% (i.e. 92% of the comments were coded the same way by all three coders).

### 6.4.3 CLASSIFICATION OF COMMENTS

Before moving on to the details of the scheme it is helpful to consider again the context within which the parental responses are being produced. The responses made by parents relate strongly to a particular event, doing the IMPACT task with their children. This is something that takes place away from the school, the task is realised 'behind closed doors' and is not directly observed by the teacher. The task has been chosen or

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[14] This training consisted of three stages. In the first stage the categories were described and examples given. The two coders were given a copy of the network and the descriptions of each category. The principles for the recognition of a codable unit were also given and discussed. The coders were asked to make up some comments of their own that would fit into particular categories. These were discussed, paying particular attention to why they considered their comments would be coded in a particular way. In the second stage, the coders were asked to identify codable units from sections of the data. These were checked and discussed. In the third stage 15 statements were coded by the coders. Again these were checked against the original coding and discussed. Fifteen further statements were then coded, checked and discussed in the same way. Following the training programme, the ability of the coders to move between the empirical data and the categories of the network was tested by giving a selection of 25 statements drawn randomly from the corpus to each coder to code independently. This process follows Bernstein's suggestion that the coding of data in this way constitutes an act of translation between the empirical data and the analytic language represented by the network and its categories (see Bernstein, 1996, p.142). The coders are faced with the task of acquiring and using a new language. It is thus necessary to provide training to enable the coders to get a feel for this language. This form of testing is described in more detail (as it is applied to the analysis of interview material) in Chapter 11.

designed by the teacher and is (or rather should be) closely tied in with the work that the child is doing at school.

The parent and the child are responsible for the realisation of the task as an activity within the home. This activity is one that is envisioned, by the teacher, as having pedagogic value. The value of the task may or may not be visible to the parent or the child (that is they may or may not have access to the recognition rules) nor, if they can see the value, are they necessarily able to 'activate' the task in order to realise its pedagogic value (a question of access to realisation rules).

The parent and the child are invited by the teacher to make comments (there being a limited range of ways in which this invitation is made, as we have seen from the analysis of the booklets in Chapter 5). The range of responses that parents could make is wide. They could, for instance, focus tightly on the process that they went through in doing the task and provide a step by step account of how the final product of the activity was achieved. They might on the other hand produce a critical evaluation of the task itself, commenting on the some aspect which they judged to be inappropriate. Another option would be to report on what their child could or could not do, or on how the child responded to the task at an emotional or motivational level. They might also comment on the teacher or school.

A parent's response to an IMPACT task might contain a combination of types of comment. An example of such a response is given below.

> John enjoyed the activity. He coped well with the numbers under 20. The numbers over 20 we used Lego Bricks to help him work out the odds and the evens by making pairs. He needs a lot more practice at odds and evens.

Here information is relayed about the child's enjoyment of the task, how well the child was able to do part of the task, how the parent organised the task and about the parent's judgement of the child's competence in a particular area of school mathematics. Some of the responses in the diaries are more complex (for instance, the response made by Ben's

parent quoted in Section 6.3 above), others more succinct (for instance, stating bluntly 'It was fun').

Each particular form of comment draws on particular resources. Some draw predominantly on direct observations the realisation of the task itself whilst others make reference to underlying mathematical principles. Each form of comment will have particular effects in terms of the image of the parent and child that are projected to the school, a complex question concerning both that which the parent sees as constituting a legitimate and worthwhile statement to make and the way in which that which is transmitted, and the form it takes, is interpreted by teachers (this will be explored in discussion of the Midbury study in Chapters 7-11 ).

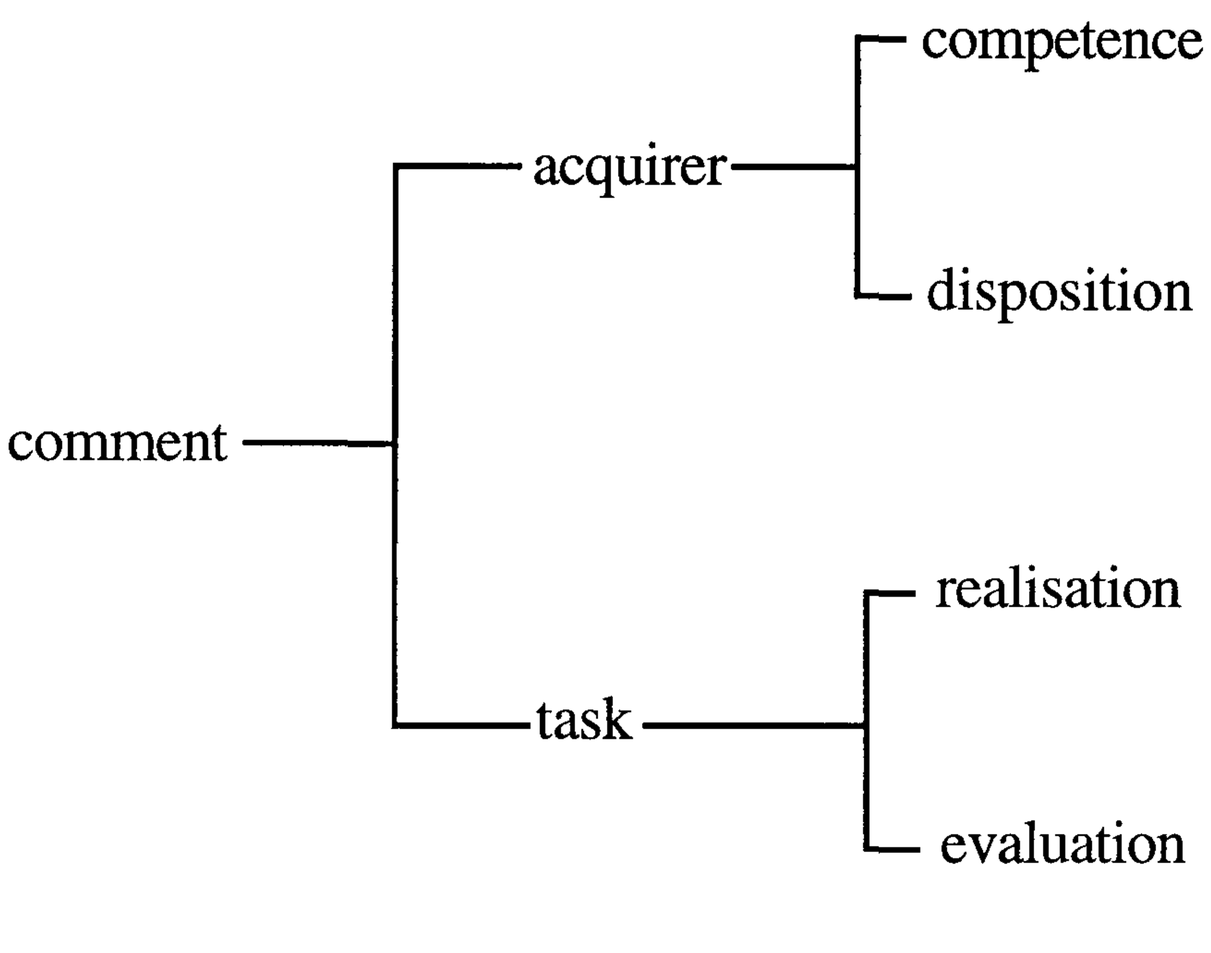


*Figure 6.2: The initial levels of the diary coding network*

In my analysis, an initial distinction is made between comments that focus on the *acquirer* and those that focus on the *task*. These kinds of comments are then subdivided again to distinguish between acquirer focused comments that refer to the *competence* of the child (for instance, 'she was able to add the small numbers together') and those that refer to their *dispositions* (for example, 'John likes cutting and sticking activities'). The task-focused comments are divided into those which focus on the *realisation* of the task

(for example, 'we made a ruler from card') and those which focus on *evaluation* of the task (for instance, 'this was a good activity'). This gives four subsystems, differentiated in terms of the focus of the statement being described. This is illustrated in Figure 6.2.

With one exception, the subsequent levels of the network share the same structure. Firstly, a distinction is made between comments that are *task-dependent*, that is comments that refer directly to the activity of doing the task (for example, 'she did some good colouring' or 'it was fun') and *task-independent* comments, that is those that pass beyond the context of the specific task and make more generalised statements (for instance, 'she knows her multiplication tables'). Task-dependent statements are then divided into those that are *specific* (i.e. make reference to a particular aspect of the task, its realisation, the child's competence or disposition) and those that are *unspecific* (for example, 'he said it was boring'). Specific comments are further divided into *mathematical* comments (i.e. those that make reference to school mathematics such as 'Charlene had difficulty in counting over 100') and *non-mathematical* comments (i.e. those that refer to a particular non-mathematical aspect of the acquirer's competence or disposition or the task or its realisation such as 'she enjoyed colouring in the picture best'). Finally a distinction can be made between *positive* and *negative* comments (e.g. comments about the acquirer's disposition act to position the child either *positively* or *negatively* with respect to schooling or school mathematics) for all parts of the network except those dealing with task realisation. The comments in the diaries dealing with the realisation of the task were considered to be neutral, except on the task-independent branch of the network, where the parents' principled reflections on their own pedagogic practice are found. These can be classified as either positive or negative.

This generates the lower levels of the network which are shown in Figure 6.3. This diagram shows the continuation of the network from the upper track of Figure 6.2, that is, following the acquirer/competence path.

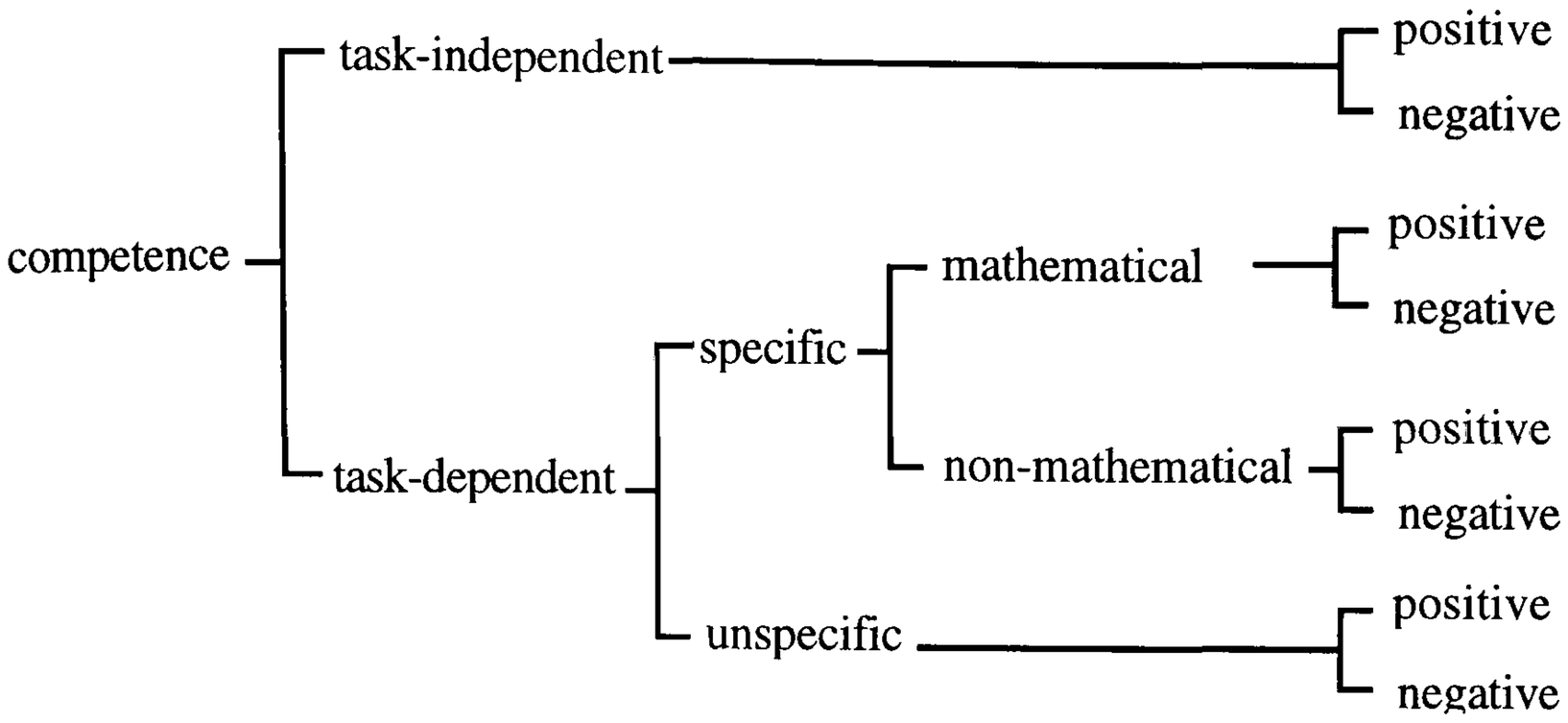


*Figure 6.3: Lower levels of the acquirer/competence network*

The complete network is constructed by appending the additional levels shown in Figure 6.3 to each of the terminal points of Figure 6.2, with the appropriate modification being made to the task/realisation track. The complete network thus far described is given in Figure 6.4 (overpage).

There is one further category of comments. These I have referred to as *contingent* comments as they relay information or make judgements that do not relate directly to either the quality of engagement in the task, the generalised competence or disposition of the child, or the features of the task itself. For example:

- Amy's hand didn't get done as she and Laura were arguing. So Amy wouldn't allow her.
- she was in a bad mood all day Sunday!
- She had just found a new dog and couldn't concentrate

As will be seen later this category of comments is far from being merely a catch-all, residual category.

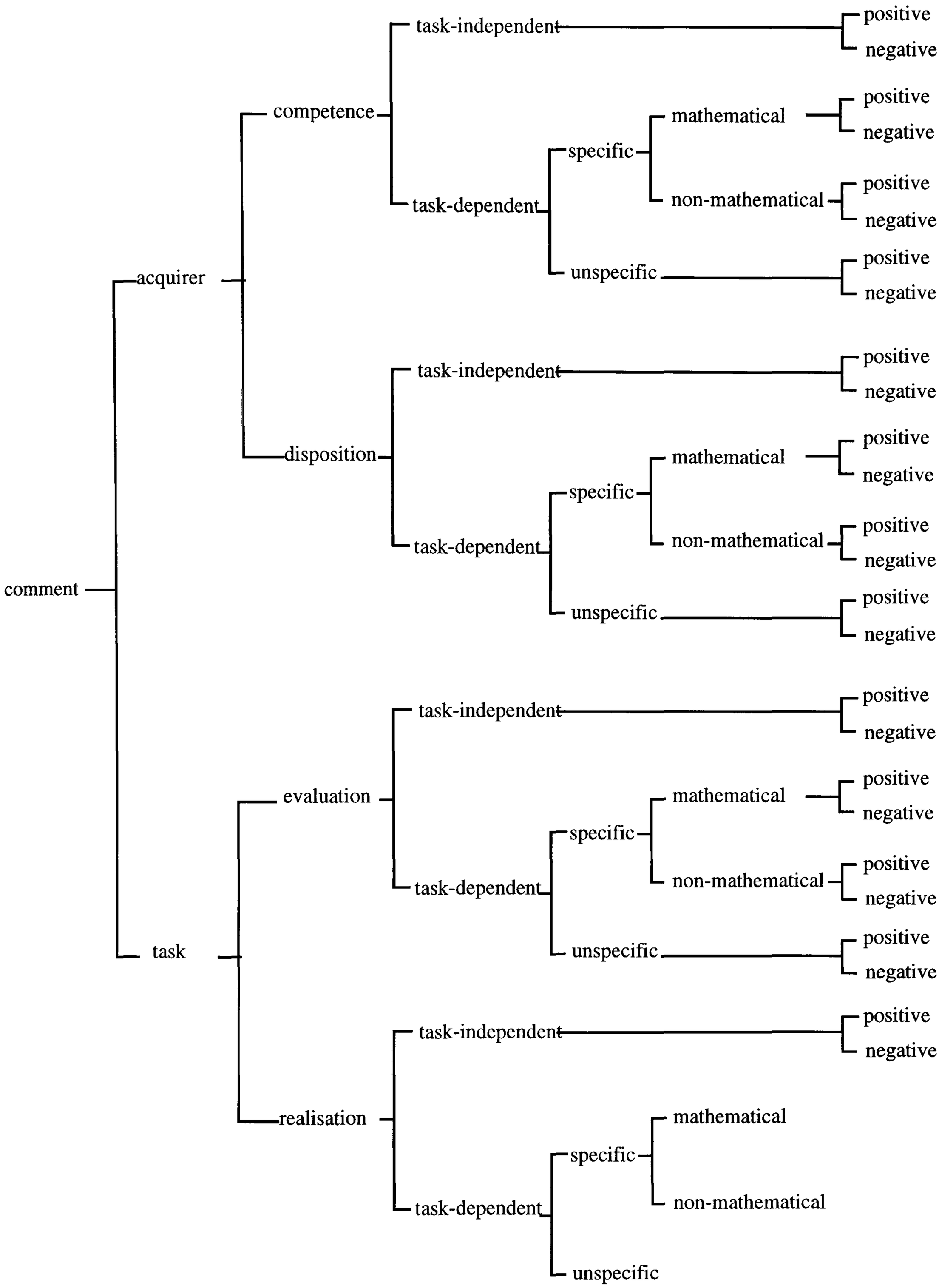


*Figure 6.4: Complete diary coding network*

The descriptions of the categories given above provide an overview of the coding scheme but do not give sufficient detail to get a real feel for the distinctions that are being made. For this it is necessary to look at the distinctions being made in each part of the network with examples of comments from the diaries. A more detailed description of the network together with examples is given in Appendix 1.

## 6.5 Results of the coding

The network described above provides the basis for the analysis of the diaries. By coding the responses made in the diaries by parents, a comparison can be made between the schools studied which, because of the nature of the sample, enables us to explore social class differences in modalities of written communication between home-school within the IMPACT project.

The sections below focus on the major quantitative outcomes of the analysis. Most notably there are significant differences between the schools in terms of:

(i) the pattern of distribution of comments;

(ii) the proportion of positive to negative comments made about the child;

(iii) the ratio of task evaluation comments to task realisation comments;

(iv) the relaying of social and domestic information from home to school.

### 6.5.1 The pattern of distribution of comments

There are marked differences between the three schools in terms of the distribution of types of comment. For instance, if we look at the proportion of comments made that fall into each of the four *form* categories within each of the collections of diaries, we find that there is a higher proportion of *task independent* comments in the East Wood diaries than in the other diaries. Related to this there is a higher proportion of *unspecific*

comments in the Chambers diaries than those from the other schools. The table below (Table 6.4) shows the frequencies of each form of comment for each school (tables giving frequencies for all the categories for each of the schools are given in Appendix 2). The variation between the schools in the distribution of forms of comments is highly statistically significant (as demonstrated using the chi squared test[15]).

| | East Wood | Beech | Chambers | Row totals |
|---|---|---|---|---|
| Task independent | 61 | 8 | 6 | 75 |
| Specific mathematical | 154 | 36 | 35 | 225 |
| Specific non-mathematical | 182 | 56 | 58 | 296 |
| Unspecific | 341 | 94 | 179 | 614 |
| Column totals | 738 | 194 | 278 | 1210 |

($\chi^2$=37.59, df=6, significant at p<0.01 level)

*Table 6.4: Comparison of forms of comments (frequency)*

The profile of the comments made by parents at each school, and the differences between schools, can be seen more clearly by presenting the distribution for each school in terms of percentage of total number of comments (Table 6.5).

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[15] A chi square test is used to establish the statistical significance of the differences between schools in terms of the distribution of types of comments made by parents (and, later, to establish the statistical significance of differences in the distribution of types of respondents across schools) . This form of test has been chosen for the following reasons: (i) it is non-parametric, that is no assumptions are made about the exact shape of the population distribution; (ii) it is appropriate for nominally measured variables; (iii) chi square is computed from bi-variate tables and allows the number of rows and columns to be easily expanded. The null hypothesis is that the two variables (schools and the types of comments made) are independent. To test this, the frequencies that would be expected if the null hypothesis were true (that is a random chance distribution) are calculated for each cell in the table and compared with the observed frequencies (that is the frequencies given in the tables of results). If the null hypothesis is true the difference between the expected and the observed frequencies will be small. In calculating whether or not the difference between the expected and observed frequencies is statistically significant the level of confidence has been set at 99% (i.e. alpha = 0.01). At this level of confidence and with a table with six degrees of freedom (as in this particular case), the critical value for chi square will be 16.812. An obtained value for chi square that is greater than this will thus lead us to reject the null hypothesis and thus consider a relationship between the two variables (school and form of comment) to have been established statistically.

| | East Wood | Beech | Chambers |
|---|---|---|---|
| Task independent | 8.3% | 4.1% | 2.2% |
| Specific mathematical | 20.9% | 18.6% | 12.6% |
| Specific non-mathematical | 24.7% | 28.9% | 20.9% |
| Unspecific | 46.2% | 48.4% | 64.4% |

(N.B. As a result of rounding, totals may not be exactly 100%)

*Table 6.5: Comparison of forms of comments (percentage)*

This table shows differences in distributions of forms of comments between schools. There are clear differences between the East Wood and Chambers diaries with Beech positioned between them. In this form the data does not, however, give any indication of the distribution of comments in terms of the individual parents. If we look at individual cases at Chambers, for instance, we find that 11.1% of the parents (six out of 54) account for all the *task independent* comments. In contrast, 50% of parents in the East Wood sample (28 out of 56) make *task independent* comments (see Table 6.6).

| : | East Wood | Beech | Chambers |
|---|---|---|---|
| Parents making task independent comments | 50% (28/56) | 12.7% (8/63) | 11.1% (6/54) |
| Parents making task dependent comments only | 50% (28/56) | 65.1% (41/63) | 70.4% (38/54) |
| Parents making no comments | 0% (0/56) | 22.2% (14/63) | 19% (10/54) |

*Table 6.6: Comparison of task independent and task dependent comments*

Finer distinctions still can be made if we look at whether or not parents making task dependent comments only index school mathematics or not. For instance, the vast

majority of East Wood parents make *task independent* and/or *mathematical* comments (93%) with a relatively small proportion of people making only *non-mathematical specific* or *unspecific* comments (7%). In contrast, of the parents of Chambers pupils, half use only *non-mathematical specific* and *unspecific* comments with 31% making task independent and mathematical comments.

It is important to note that all parents who make task independent statements also make the other forms of comment as well. This can be illustrated by looking in turn at the comments made by the only two Chambers Y3 parents who make *task independent* comments. Given below is the entire text of Charlene's IMPACT diary. It gives the comments made by her parents to all seven IMPACT tasks set by the teacher.

1. Charlene finds it difficult to add with money.
2. Charlene found it difficult to understand but then she learn what was all about target.
3. Charlene had difficulty in counting over 100. Defining colours was easy.
4. It was just right.
5. Charlene found it interesting but easy.
6. Just right
7. Charlene found it a bit difficult and needed help.

In response to first task, the parent makes a *task independent* comment. The full range of forms of comment are also made: *specific mathematical* (e.g. the first sentence of the third response), *specific non-mathematical* (e.g. the second sentence of the third response), *unspecific* (response to task 5). In common with the majority of the Chambers diaries, each response in this example is short (consisting of one or two comments). It also contains two responses which are coded as *task evaluations* (responses to tasks 4 and 7).

The responses of the second Chambers parent from the Y3 class who makes task independent comments, bear greater resemblance to the responses made by the majority

of the East Wood parents, in that each response is made up of more than one comment. They gave responses to four of the seven activities.

1. Jenny was aware of selecting items that were too expensive and replaced them without any guidance. PS please help her to write better than her Dad.

2. Jenny was no at all clear about what she had learnt. She thought it was about counting—how many smarties in a box etc. Presumably though this is part of Data Handling and probability?

3. We were not sure what to do—it was badly explained on the sheet. Once we sorted it out the game was good. We will spend more time on this later—Jenny is still not sure of 10s and units.

4. To follow the instructions and make 3 figure numbers we took the 10s out as well. This IMPACT must have been well explained in class as Jenny knew exactly what to do.

In the four responses there are ten coded comments. The statement that 'Jenny is still not sure of 10s and units' in the second response is a *task independent* comment. As with Charlene's parent, the full range of other forms of comment are also made. This is the case across the full sample from all three schools for all the parents who make *task independent* comments.

We can divide the parents who make comments in the diaries into two main groups: (i) those who make a range of comments including *task independent* comments; (ii) those who make only *task dependent* comments. The latter group can be further divided into those who index school mathematics (i.e. their comments include those classified as *specific mathematical*) and those who do not (i.e. they only make *specific non-mathematical* and/or *unspecific* comments). Each group is represented in the sample drawn from each school, but in clearly differing proportions.

The differences between these groups can be understood in terms of reference to resources outside the activity (either to generalised mathematical resources or to assessments of the child's underlying competences or dispositions) and thus to the degree of *localisation* or *generalisation* of the concerns of the parents. At one extreme,

the comments made appear to presume a degree of transparency to the task in that they relay just what happened in the realisation of the task, for example whether or not it went well, or was enjoyable, or the child required help, and so on. The messages relayed about the parents and their children are largely in terms of the task set by the teacher, without any apparent problematisation of the manner in which the task is or might be realised or of the resources that they may or may not bring to the task. It appears that the expertise of the parents is being presented in terms of the management of the IMPACT task just as any other domestic task. In some cases parents make only task dependent comments, but index the mathematical content. In others, the specificity of the task as school mathematics is lost and the IMPACT task is thus 'just a task that we did' and 'it went OK.' Parents who make only task dependent comments, I will refer to as *localisers.*

In contrast, those parents who include *task independent* comments in their repertoire are not only relaying information about how the child engaged with the particular task but also demonstrate an apparent grasp of a set of criteria for the judgement of underlying competences and dispositions. These parents I shall refer to as *generalisers.* Table 6.7 gives the distribution of generalisers and localisers according to school.

| | East Wood | Beech | Chambers | Row totals |
|---|---|---|---|---|
| Generalisers | 28 | 8 | 6 | 42 |
| Localisers | 28 | 41 | 38 | 107 |
| Column totals | 56 | 49 | 44 | 149 |

($\chi^2$ =21.15, df=2, significant at p<0.01 level)

*Table 6.7: Distribution of generalisers and localisers according to school*

Parents who do not make comments cannot be classified in this way and have thus been excluded.

It is not possible to argue here that one group has access to these criteria and the other groups do not—this may or may not be the case, the necessary empirical data is just not available here (access to criteria is, however, a central concern of the study discussed in Chapters 7-11, based on interviews with parents and teachers from four schools). Each group does, however, adopt a different orientation to the supposed dialogue with the teacher. Some parents appear to adopt a strategy of minimal interaction via the diary and to relay highly context specific and minimally processed information. Others appear to adopt a strategy of relaying a wide range of information which includes the adoption of the language of school mathematics and making more highly processed assessments of their children. Whilst it is possible to make these statements about these apparent differences in orientation of the parents, it is not possible, at this stage, to say anything about differences in the homes of the children as contexts for the elaboration of school mathematics on the basis of the empirical evidence available, however.

It is important to be constantly aware that the comments cannot be taken to be accounts of what happened but are rather indications of what it is that the parents feel is appropriate to be relayed from home to school. These thus become a source for investigating the strategies used and the discursive resources drawn on by parents in positioning themselves and their children in relation to the school in general, and school mathematics in particular. The localising of the action, and authority, of the parents to the domestic sphere is evident in the highly localised and context specific nature of certain kinds of comments. This relates to the localisation of the concerns and sphere of legitimate action of parents noted in the analysis of booklets produced by schools for parents (see Chapter 5). In the diaries, however, it is not the school that is positioning parents in this way but the parents themselves. Some parents are limiting the information they relay to the school and are placing the interpretation of what is relayed in the hands of teachers (this is pursued further in Section 6.6.2 below). In contrast,

those parents who are making task independent comments are demonstrating to the teacher that they can use the context provided by the task to *assess* the competence of the child and then relay a more highly processed account to the school. To go any further with this line of argument requires a close analytic reading of the comments made by parents in the diaries. The coding of the comments is just the first stage of such an investigation.

### 6.5.2 POSITIVE AND NEGATIVE COMMENTS ABOUT THE CHILD

A second marked difference is the ratio between positive and negative acquirer focused comments. The ratios for each school are as follows:

| | East Wood | Beech | Chambers |
|---|---|---|---|
| Acquirer positive (no.) | 537 | 120 | 116 |
| Acquirer negative (no.) | 87 | 31 | 38 |
| Ratio (pos: neg) | 6.17:1 | 3.87:1 | 3.05:1 |

*Table 6.8: Ratios of positive to negative comments*

If we look again at the contrast between the responses made by East Wood parents and those made by Chambers parents we find amongst them two distinct patterns. As can be seen from the above the East Wood parents are relaying an overwhelmingly positive image of their children to the school. If we look at the diaries themselves we find that this is achieved through the use of both comments that indicate that the child has performed well on the specific task, either generally or on a particular aspect of the task, and by relaying their own assessments of the competence of their child in generalised terms. For example:

> Philip enjoyed this game. He made very few mistakes. He can mentally add small numbers together after that he uses his fingers or the marks on the cards. Philip insisted on having a go with 4 and even 5 cards.

Where a negative comment is made about the competence or disposition of the child it is often counterbalanced by a number of positive statements about, for instance, their performance on other aspects of the task. The following response from one of the East Wood diaries serves to illustrate this.

> Andrew quickly recognised that it was best to start with high denomination coins first and found that addition involved quite easy. He has a tendency to count on for relatively simple additions e.g. 10 + 5 but expect that it will become more automatic in time.

It would appear that a number of these parents are thus projecting a very positive image of their child into the school and are, to some extent, involved in a form of 'impression management'. The predominant form of response amongst the Chambers parents is, in contrast, a single comment. A higher proportion of these are negative and, given that often one comment constitutes the response, it is uncommon for the strategy of 'counterbalancing' to be employed.

### 6.5.3 TASK EVALUATION AND TASK REALISATION COMMENTS

Even more marked is the difference in the ratio of evaluation to realisation comments amongst the task focused comments (see Table 6.9). It was initially rather surprising that parents of children at Chambers appeared to be more willing to relay opinions about the quality or appropriateness of the tasks set by the teacher than others. The comments are, however, predominantly *unspecific* or *specific non-mathematical* in form (94%) and do not engage in either a mathematical or task independent discussion or analysis of the task. They are, thus, much more at the level of whether the task worked or not, either in general terms or by drawing attention to one particular aspect of the activity that

| | East Wood | Beech | Chambers |
|---|---|---|---|
| Task evaluation (no.) | 7 | 25 | 53 |
| Task realisation (no.) | 13 | 18 | 4 |
| Ratio (eval: realisation) | 0.77:1 | 1.39:1 | 9.33:1 |

*Table 6.9: Ratios of evaluation to realisation comments*

was considered to be either problematic or particularly good. For example:

- The game went very well.
- Did not think the game was explained clearly.

At East Wood task focused comments were more likely to be expositions on the *process* that the parent went through in turning the task into an activity with their child. For example:

- we carried the game on beyond 3 squares.
- We got Tom to start counting from the highest face value card.

There is nothing in the IMPACT project material that suggests that parents should relay this kind of information. One way of reading this is to see the parent as demonstrating their own pedagogic competence and conscientiousness in carrying out the task. To an extent the relaying of this type of information, and the perception on the part of the parent that this is appropriate information to relay, indicates a problematisation of pedagogy. The task is not transparent, nor is the conduct of the activity routine. The parent has to do something to activate the task and recognises that there are decisions to be made in doing this that affect the quality of the resulting activity. As a pedagogic agent the parent could be seen as placing themselves on a par with the teacher. On the other hand the evaluation of the task in terms of whether it was good or not good could be seen as minimising the role played by the parent, the fault lies with the task itself (and thus with the teacher in selecting it) rather than with the skill of the parent in

putting it into action and managing the situation. Here the parent is subordinating themselves to the teacher.

### 6.5.4 CONTINGENT INFORMATION

There is a marked difference between East Wood and the other two schools in the number of *contingent* comments:

| | East Wood | Beech | Chambers |
|---|---|---|---|
| Contingent comments (no.) | 56 | 0 | 3 |

*Table 6.10: Comparison of number of contingent comments*

These kinds of comments occur almost exclusively in the East Wood diaries. They provide a level of social detail that is beyond the apparent requirements of the situation. Many of these comments are in the form of justifications for not completing the task, for conducting it in a particular way or for doing the task late. In doing this they relay details about domestic circumstances and events that are not found in the diaries from the other schools.

## 6.6 Some sociological considerations

### 6.6.1 DIARIES AND DIALOGUE

As we have seen from the discussion of the IMPACT project in Chapter 2, in the early stages of the project Merttens and Vass (1987b) claimed that 'genuine parental participation sets up a dialogue between teacher and parents' (ibid., p. 268) and that such a dialogue might have a number of effects. They list three. Firstly they claim that

dialogue between teacher and parent regarding mathematical activities carried out in the home will have the effect of making the boundaries between school subjects 'naturally blurred, since the child's learning experiences cannot be broken up into these categories' (ibid.). Secondly they claim that 'it becomes increasingly hard to distinguish a hierarchy of learning' (ibid.) as parents will successfully accomplish things in the home with children that might conventionally, in the eyes of the teacher, be seen as being 'in the wrong order'. The third effect is that 'once a partnership is established, teachers are not only informing parents what is happening in the curriculum, but are also having to take on board the parents' view' (ibid., p. 270). Furthermore, it is claimed that 'this has the effect of blurring the boundaries between the role of the teacher and that of the parent' (ibid.). IMPACT is presented here as providing a means for changing the nature of communicative relations between school and home. The dialogue between parents and teachers that develops around each individual child's performance on the IMPACT tasks (this dialogue takes place predominantly through the IMPACT diary but may also be face-to-face) is seen as allowing the parent to speak legitimately within the school. A number of difficult to sustain assumptions are being made here both about what can and will be said by parents and how this is interpreted within the school.

Merttens & Vass are drawing a distinction between what they see as the artificiality of the strongly classified subject based curriculum of the school, which acts to partition and label fragments of the knowledge, and the natural undifferentiated quality of the experience of the student (the 'seamless robe of knowledge' of the Hadow Report, 1931). In contrast to parents, whose readings of the performance of the child are presented as somehow 'natural' and unmediated, teachers are seen as being disposed towards reading children's performances in terms of the categories and hierarchies provided by the school curriculum. With respect to teachers, this neglects the extent to which there is likely to be variation in the teacher's reading of performance both in

relation to the age of the student (i.e. the form of the reading will differ across phases from pre-school to primary to secondary to tertiary education) and positioning of the student and teacher in social space (e.g. variation with respect to location within the state or private education sector, the ascribed level of attainment of the student or other factors which act to delineate the pedagogic identity of the student and the position of the teacher in relation to this). Here we have an empirical question of the extent of variation in the readings of teachers and a conceptual question of how we might describe, particularly in relation to pedagogic time and social space, the potential or actual variation in interpretations of performances. With respect to parents, the position taken by the IMPACT project neglects the possible variation in the discursive resources drawn on by parents in the interpretation of the task, the realisation of the task and the production of the comments in the diaries. The purpose of the study reported in this chapter is to explore the relationship between social class and the variation in what parents say in the diaries and how they say it.

### 6.6.2 Assessment and evaluation

The analysis of the diary comments has demonstrated that there are marked differences in the distribution of comments between the schools both in terms of the form and content of the comments made by parents. In the most middle class of the schools (East Wood) there are a higher proportion of parents who make task independent comments (50% of the parents compared to 13.6% of the parents who made comments at Chambers). These parents, who I have called generalisers, are making assessments of the competence or dispositions of their child, or making generalised evaluations of pedagogic tasks or generalised statements about the realisation of tasks, and are relaying these to the school in the form of context independent statements. The criteria for such assessments and evaluations lie with the parents themselves. The raw material on which the judgements are based (the features of the realisation of the task, including details of

the child's performance) are not necessarily made available to the teacher. In contrast, there are parents who make only task dependent comments, who I have called localisers. The highest proportion of parents classified as localisers have children at Chambers (86.3% of the parents who make comments compared with 50% of the parents in the East Wood sample), the most working class of the schools. Here highly context dependent information is relayed to the school. This can only be interpreted in relation to the particular task in question. Though judgements are being made by the parents, these are of a different order in that they do not entail making statements about underlying competences or dispositions or generalised characteristics of tasks or pedagogy. The relay here is closer to raw material that can be used in the context of assessment or evaluation by the teacher. The criteria for assessment/evaluation thus lie with the teacher.

In making statements about the competence and disposition of their children, it also appears that some of the East Wood parents are projecting a more consistently positive image of their children into the school. As we have seen in Section 6.5.2, the ratio of positive to negative acquirer statements is far higher at East Wood than at the other schools (6.17:1 compared to 3.05:1 at Chambers). Here it appears that the IMPACT diaries are providing a new opportunity for parents to manage the image of their child, and of themselves, projected into the school, and that parents are responding to this opportunity in different ways. It is also clear that teachers are, in turn, responding to the parents who do this. The following example is from one of the East Wood diaries.

> P: He was very quick to see that an odd number could not be divided by 4. He also quickly worked out that to find a quarter, you half a number then half it again.
> T: Excellent Ben, I'm delighted that you can show everybody at home how clever you are.

Through the diaries, parents also relay additional information about the suitability of their home and domestic life for the elaboration of school knowledge, and demonstrate their own pedagogic competence by communicating details of the process of putting the task into action. The greater stress placed on task evaluation (rather than realisation) by

Chambers and Beech parents relates to this. As observed in Section 6.5.3, they appear to place greater emphasis on the characteristics of the task set in the evaluation of its success or failure, than on the manner in which the task is realised. In contrast, East Wood parents make more realisation than evaluation comments.

These differences are important because the information that passes between the home and the school becomes available to the teacher and can feed into the assessment of the child and evaluation of the parents. This is fundamental to the IMPACT process and also lies at the heart of initiatives such as 'All About Me' in which parents compile structured information about the development of their child that then becomes part of the child's pre-school records (see Wolfendale, 1991, 1998). Viewed in this way reports of contextualised performances from outside the school are interpreted by teachers as indicators of underlying competences or dispositions. This is a benign view of the relaying of information which ties in with the perspective that the more information the teacher has the more accurate and complete their assessments are likely to be. There are two distinct problems with this position. Firstly it fails to account for the way in which the information relayed can be used in the legitimation of judgements made by teachers and does not elaborate the principles by which this happens. The information relayed feeds into a reservoir of data from which the teacher draws in making or legitimising judgements. The principles of selection at play here, particularly with respect to what we might call 'social' or 'cultural' information, are unclear. Secondly the manner in which relevant information is recognised and selected and the way in which this information is relayed is not problematised. This difficulty is recognised by the IMPACT project directors (see, for instance, Merttens, 1994).

The extent to which the parent can control this process is limited. The process of evaluation and assessment takes place within the school and the circulation of information from the home is out of the hands of the parents. Even if minimal information is passed to the school in the form of diary responses the products of the

tasks carried out within the home pass into the school and can be evaluated not just as products in their own right but as the products of particular domestic circumstances (that is it is possible to read something of the parents and the home into the outcomes of the tasks just as it is possible to judge the competences of the child[16]). Additionally the recognition and realisation rules for the assessment or evaluation of children are not made explicit in communications with parents so only those parents who already have access to these (either explicitly or tacitly) can produce with any degree control the forms of outcomes or utterances that position themselves and their children favourably through the operation of these evaluation and assessment processes.

The sample of schools is structured in terms of the social class of the intake and thus it is possible to posit an association between social class and forms of engagement in the dialogue with the teacher[17]. The strength of the assertion that the forms of the responses are structured along the lines of social class is based principally on the existence of all forms of comment in the diaries from each school in the sample. It might be argued that the distinctive combination of comments made by the majority of East Wood parents is merely a function of the manner in which IMPACT is carried out within this school. However, the responses of the East Wood parents are mixed, with a small proportion bearing resemblance to those made by the majority of Chambers parents. If, through the operation of IMPACT, some parents at this school have learnt to respond in a particular way then the question of why some parents do not appear to learn this has to be asked. The data that would enable us to establish precisely who, in terms of social characteristics, these people are is not available within this study. This is explored in the Midbury study, reported in Chapters 7-11.

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[16] This is apparent from the comments made by teachers at the meetings attended and in interviews conducted within the project. See Brown (1993) for an early discussion of this.

[17] The contribution of the teacher to this dialogue is important but is not dealt with here. This issue is considered by Dowling (1998b).

### 6.6.3 PROFESSIONAL/LAY RELATIONS

Merttens and Vass, in considering the possible challenge that parents might provide to the preconceptions, assumptions and professional knowledge of teachers (discussed earlier in this chapter), draw an analogy with the medical interview:

> Generally when we go to the doctors we have some idea not only about what is wrong with us, but also about what to do about it. We go in order to enter into a dialogue, in which on one side there will be ourselves, with our intuitions and our feelings and our knowledge of ourselves, and on the other will be the doctor with her (sic) professional expertise and knowledge acquired through training and experience. Few people would maintain today that the patient should have no say in the treatment. But, also, few could be so foolish to ignore completely the professional's expertise. For most of us in this situation it is the dialogue that is important. (Merttens & Vass, 1987b, p. 270)

This passage obviously refers to what the authors consider should be, rather than what is, both in the domain of medicine and of education. Even so the scenario lacks recognition of the manner in which participants in such encounters position themselves in relation to each other and interpret each others actions and utterances. Numerous studies in the sociology of health and illness have drawn attention to an asymmetry of power in medical consultations. Silverman's (1983) study of consultations at a cleft palate clinic, for example, demonstrates how, in an exchange that follows a question-answer-further question format, the questioner, in this case the doctor, controls the agenda for the consultation. He also demonstrates, through the analysis of specific instances, how a particular discourse is constructed which acts to constitute the patient as what he calls a 'marginalised' subject. In the light of this kind of work within the domain of medicine, it is interesting to contrast the image of the medical interview given by Merttens and Vass with that drawn by Bernstein.

> In any pedagogic relationship the transmitter has to learn to be a transmitter and the acquirer has to learn to be an acquirer. When you go to the doctor you have to learn how to be a patient. It is no good going to the doctor and saying, 'I feel really bad today, everything is really grey.' He (sic) says, 'Don't waste my time,' because he has many patients. 'Where is the pain? How long have you had it? What kind of pain is it? Is it acute? Is it chronic? Is it sharp? Is it persistent?' After a bit you learn how to talk to your doctor. He teaches you to be an acquirer. But how he teaches you is the function of a much more general set of forces. (Bernstein, 1990, p. 65)

Here the relative dominance of the doctor and subordination of the patient is more fully elaborated. The patient learns how to be a patient much as, through the professional redescription of their practice, the student teacher learns how to be a student teacher and the mother learns how to be a mother. This, of course, does not prescribe the interpretations and strategies of any given patient. Patients themselves will come to these encounters with differing orientations to medical practice and different degrees of specialised knowledge of their own. In both the accounts of medical consultations given above, the patient is seen as having localised knowledge of their own symptoms. In Bernstein's example, however, it is acknowledged that it is the doctor who provides the criteria by which relevant symptoms can be identified, the language within which they can be described and the conceptual framework within which meaning can be made of them. What is being communicated to the patient are the criteria for recognition of relevant symptoms and the means by which to describe them in such a way as they can be interpreted by the doctor. This aspect of professional/lay interaction, is missing from the IMPACT account.

Whilst the manner in which professional/lay relations are described in the IMPACT literature appears to neglect pre-existing social relations, the pedagogic component of professional/lay interactions is clearly evident in its descriptions of parent/teacher relations. From the earlier discussion of the project, it can be seen that both parent and child are viewed as subject to the pedagogic action of the school. Whilst the improvement of the mathematical attainment of the child is the ultimate object, the transformation of the home into a new official pedagogic site and the parent into an official pedagogic agent are necessary steps along the way. Merttens & Vass present IMPACT as contributing to 'parental education in mathematics' (Merttens & Vass, 1987a, p.25). The parent is not, however, directly subject to the pedagogic action of the teacher (there are not, for instance, materials or events which are designed to teach parents mathematics or pedagogic techniques directly, as there would be in the Family

Math approach—see discussion in Section 2.3). Rather, the child is seen as the principal pedagogic agent, with respect to IMPACT tasks, in the domestic setting. Merttens and Vass state that:

> At home, it is the child who can act as instructor and explain unfamiliar mathematics ... The unthreatening nature of the circumstances involved mean that parents learn mathematics enjoyably and experience a corresponding increase in confidence.' (ibid.)

Statements such as this clearly neglect the existence of forms of pedagogic relations within the home which pre-date the intervention. It is possible that the form of pedagogic relation proposed here will be at odds with established parent/child authority relations, for instance. Certainly, the realisation of the IMPACT within the home will be influenced by the particular history of domestic pedagogic relations. They will also be influenced by the particular 'pedagogic biography' of the parent, that is the parent's own experience of schooling, their educational qualifications and their subsequent experiences in official and unofficial pedagogic settings. Clearly, there will be substantial differences in the pedagogic biographies of parents. This will include marked differences in their relationship to the discourses of mathematics and school mathematics.

There will also be differences in the manner in which parents position themselves socially with respect to the teacher. Some will clearly see themselves as occupying social status positions that are higher than that of a primary school teacher. One possible explanation for the occurrence of contingent comments in East Wood, but not, to the same extent, in the other schools, is that the middle class parents within the school are able to approach the teacher as, at least, a social equal. There is an extent to which the social and domestic circumstances of these parents match to some extent with those of the teacher. In contrast it might be that working class parents either do not see it as appropriate to communicate this kind of information to the school or, related to this, they feel that to do so would open their domestic activity to critical scrutiny and, given

the social distance between parent and teacher, this might act to the disadvantage of their child[18].Exploration of the dialogue between parents and teachers in this way can clearly be taken further. For example, Dowling (1998b) has used examples drawn from these diaries to explore the positioning strategies deployed by parents and teachers in attempts to variously establish, maintain and subvert conventional professional/lay relations in and through dialogue.

### 6.6.4 SOCIAL AND PEDAGOGIC RELATIONS

There are distinct differences between the social organisation of school practices and the social organisation of domestic practices. Bernstein (1996) makes the distinction between everyday, oral or common-sense knowledges (what he calls *horizontal* discourse) and specialised, most often written knowledges (*vertical* discourse) and explores their similarity in terms of 'the role of distributive rules in both forms of knowledge and in the social relations which optimize the discourse' (Bernstein, 1996, p.170). School practices can be seen as *vertically* organised. Vertical discourse 'takes the form of a coherent, explicit, systematically principled structure, hierarchically organised, *or* it takes the form of a series of specialized languages with specialised modes of interrogation and specialized criteria for the production of texts' (ibid., p.171). Domestic practices on the other hand might be viewed as *horizontally* organised. Horizontal discourse is, according to Bernstein, 'local, segmental, context dependent, tacit, multi-layered, often contradictory across contexts but not within contexts' (ibid.). Here practices are largely judged by their effectiveness in a given context—they either work or they do not . Thus schooling might be constituted as a

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[18] Duxbury (1987), in a study based on in-depth interviews with 30 mothers of pre-school children, found that young working class mothers were reluctant to discuss difficulties that they were experiencing with their young children with 'childcare professionals' as they saw this as opening up their own practices as mothers to negative evaluation.

strongly regulated set of vertically organised practices (although the strength of this regulation varies over time and across settings) whereas parenting is not[19].

Distributive rules clearly operate in regulating who can say, do or have access to what within the strongly regulated hierarchical organisation of vertical discourse. If we take the case of the natural sciences, we can, for instance, identify criteria for the recognition of legitimate knowledge, criteria for the identification of legitimate realisations of knowledge, specific forms of transmission of knowledge and criteria for evaluation of performance by individuals or groups. Induction into a specific vertical discourse is predicated on the recognition of a hierarchy of transmitters and acquirers, the construction of pedagogic texts (through the principled recontextualisation of elements of the discourse and their temporal organisation into a paced sequence—a curriculum), the development of criteria for evaluation of performance and the establishment of possible personal trajectories and careers within the discourse.

Whilst the relationship between potential and actual practice within strongly regulated vertical discourse is relatively clear, this relationship is apparently more problematic within segmentally organised and context–specific horizontal discourse. Here Bernstein focuses on the relationship between the reservoir of strategies created by all the members of a given group and the repertoire developed by each individual in response to the contingencies of their everyday encounters. Under these circumstances, the extent to which the overall reservoir (the sum total of what is possible) and the individual repertoires (that to which each member of a community has access) which comprise the reservoir can grow is related to the extent of inter-personal interaction and exchange of strategies. Restriction of the circulation or exchange of strategies either reduces the

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[19] The question of the regulation of parenting, in the form of running courses for prospective parents, making the receipt of child benefit dependent upon attendance at 'parenting classes' (as proposed by Sir Christopher Ball) and exercising some control over who can and who cannot be a parent (as suggested by Sir Roy Carne, for instance) is the subject of continuing public debate, however. See Home Office (1998) for an indication of contemporary policy developments with regard to parenting and the family.

effectiveness of the discourse (e.g. the individual repertoires of strategies are not extensive enough to meet practical demands), further segments the discourse (e.g. geographically distinct communities of practice are created through spatial restriction of interchange) or specialises the discourse (e.g. hierarchical social relations between individuals or groups within a community produces privileging of access to particular strategies). Meanings within horizontal discourse are local, affective and context specific. Strategies and knowledges are acquired locally through segmented activity and are evaluated locally in terms of their effectiveness. They are thus volatile across space and time and open to wide variation and change.

From a sociological viewpoint this seems a more fruitful way of viewing relations between home and school than viewing them as equal but different 'contexts'. The theory of learning congruence proposed by Woods & Merttens presents home and school contexts as neutral and malleable, but different in some ill-defined way. These contexts are presented as without social structure and open to transformation through the establishment of dialogue. An alternative view would be to see the attempt to foster the participation of parents in the mathematics education of their children as creating the opportunity for the verticalising, or institutionalising, of domestic practices within the school. These practices are 'sucked up' by and structured in the terms of school mathematics, with the attendant creation of a hierarchy of voices and distribution of message. Those parents who are already 'subjects' of school mathematics and pedagogy, in that they have access, to some degree, to the principles of construction of the discourse of primary school mathematics, can relay the right kinds of messages to the school. As we are concerned here with school mathematics, it is within the school that the products of the IMPACT tasks and the responses of parents are interpreted: whilst attainment in school mathematics is the issue, there is no escaping subjection to institutionalised knowledge. On the other hand, in some homes there appears to be a horizontalising of the vertical practices of the school. The school mathematics task

becomes just one more activity amongst other domestic activities and thus subject to the forms of evaluation that might be seen as operating widely across domestic activity as a whole—does it work? The parent's role in this case is to regulate the execution of the task just as they would any other domestic task.

## 6.7 Conclusion

In the analysis of IMPACT booklets presented in the previous chapter, it was argued that initiatives such as IMPACT could be seen as 'colonising' the home as a secondary site for the pedagogic elaboration of school mathematics. Whilst the analysis of the booklets would support the argument that the intervention of the school can be read in this way, the analysis of the diaries has highlighted the importance of looking at differences in the way in which parents position themselves with respect to these initiatives.

From the discussion here it would appear that the form of written interaction established between teachers and parents allows a range of forms of engagement. Two principal contrasting forms of engagement have been identified in this chapter. One group of parents appear to be able to position themselves and their children favourably in relation to the school, both in terms of the competence and disposition of the child and the parents' operationalising of the tasks in the domestic setting. The other group take part in a very much attenuated dialogue in which the 'raw material' of judgements about whether or not the activities went well or worked or were hard and so on are relayed to the teacher. There is no suggestion that any of the parents are acting in a cynical manner. On the basis of the structuring of the sample, we can posit that there is a relationship between the social class of the parents and the form of engagement in this dialogue with the teacher. In the discussion above, I have explored possible

explanations for this difference by referring to the social structuring of pedagogic relations and of professional/lay relations.

The study reported in this chapter has two key limitations that prevent us from taking this investigation further. Firstly, we have no access to the principles by which teachers interpret what is written by parents in the diaries or how they evaluate the outcomes of the tasks. Secondly, we are not able to relate what is written in the diaries to the specific social characteristics and pedagogic biographies of individual parents. The study reported in the following chapters sets out to address these limitations.

# Chapter 7 The Midbury study: sample, design and method

## 7.1 Introduction

In the preceding chapter, the analysis of the comments made by parents in IMPACT diaries indicated that parents could be divided, on the basis of the types of comments made, into two groups: (i) *generalisers* —those who make use of the range of *forms* of comment identified (i.e. both *task independent* and *task dependent* comments); (ii) *localisers*—those whose comments focus either on the realisation of the task in general terms or on some specific, non-mathematical, aspect of doing the task. The former group, in making generalised comments about, say, the academic competence of their children or the mathematical potential of certain kinds of tasks, would appear to have access to the criteria for the judgement of underlying competences in children and principles for the operationalisation of mathematics tasks in a 'school-like' way. They would thus appear to be 'subjects' of both school mathematics and pedagogy. In contrast, the latter group appear to be focus on the more immediate realisation of the task, commenting on the details of 'what happened' and 'how it went', for example. This group would thus appear to be positioned as dependant or subordinate with respect to school mathematics.

Whilst the analysis of the diaries makes it possible to state that there are distinct differences in what is relayed to the teacher by each of the two groups of parents, it is not possible, on the basis of the data available from the diaries, to say what lies behind this. Can we infer from this data, for example, that different distributions of types of comments are indicators of different orientations to schooling which, in turn, give rise to different notions of what constitutes a legitimate communication from home to school? Alternatively, is it, rather, that differences in the distribution of forms of

comments demonstrate that one group has access to the requisite principles and criteria whilst the other does not? The nature of the sampling and the information available render it difficult to make such distinctions at an empirical level. Furthermore, the absence of data regarding the bases of the judgements made by teachers makes it difficult to position the discourse and practices of the parents in relation to those of the teachers. An additional limitation is that, although statements can be made about the probable relationship between the social class of the parent and the forms of comment made, this can only be done in the most general sense since the data available regarding social class is not at an individual level. In order to begin to address these concerns and to produce a more detailed account of the manner in which parents are positioned and position themselves in relation to the school, it is necessary to examine the relationship between the teacher's selection of tasks and evaluation of outcomes and the parent's realisation and evaluation of the tasks. The small-scale study reported here sets out to do this.

The sections that follow describe the aims of the study, give details of the design and outline the procedures followed. This small-scale study sets out to explore processes and relationships through examination of contrasting groups, rather than seek statistical generalisations from large representative samples. Particular attention is paid to the selection of the sample. The process is described by which schools and interviewees were selected to maximise the probability of generating contrasting samples containing members of the relevant groups.

## 7.2 The aim of the study

Within the general set of concerns outlined above, this study sets out to investigate: (i) the principles by which teachers read, select, and evaluate IMPACT tasks; (ii) the characteristics of teachers' ideal realisation of IMPACT tasks and how they evaluate

parents' engagement with the tasks in relation to this; (iii) the manner in which parents from different social class backgrounds read, operationalise, engage with and evaluate IMPACT tasks; (iv) how the latter relates to the accounts given by teachers and varies within and between social class groups; (v) how the semantic orientation of parents varies within and between social class groups and how this relates to their access to the principles for the realisation of school mathematics tasks within the home.

## 7.3 The design of the study

The most appropriate way to investigate the questions outlined above is to interview teachers who are actively involved in IMPACT and make comparisons between their account of doing IMPACT (both in general and with specific reference to the children they currently teach and their parents) and the accounts of a sample of the parents. In order to explore the relationship between social class and mode of participation in IMPACT, the effect that the age of the child might have on mode of participation and the effects of differences in the motivation of parents with respect to IMPACT, it is necessary to structure the sample in such a way that clear contrasts can be drawn. The sampling must thus maximise the possibility for contrasts in terms of social class, age of children and level of motivation of parents.

To take just two schools with contrasting intake profiles would open the study to the risk of selection of an idiosyncratic school. In order to reduce this possibility it was decided to carry out the research in two inner city schools (with a predominantly working class intake) and two suburban schools (with a predominantly middle class intake) to be chosen by following a clearly defined selection process (see Section 7.5.1 below). It was decided to control for possible effects of cultural differences and linguistic factors with respect to the relationship of parents and children to schooling by selecting schools that had a predominantly white, indigenous intake. Within each school

it was decided to interview two teachers (one KS1 and one KS2) and to ask them to identify parents who were, in their view, either enthusiastic and unenthusiastic about IMPACT, and to draw the parent sample equally from these two groups (i.e. two enthusiastic parents and two unenthusiastic parents from each class, giving 32 parent interviews in all). The profile of the parent sample is given in Figure 7.5. Details of precisely how the sample was selected are given in Sections 7.5.3.

In order to make the necessary comparisons it is important that the interviews with teachers and with parents follow, in certain respects, the same structure. The teacher interviews were designed start from a very specific focus on the IMPACT tasks the teachers have actually used with the children they currently teach and to explore how they select tasks, evaluate outcomes and so on. The interview moves from this highly specific focus to consider more general questions relating to IMPACT and parental participation. Similarly the parent interview starts with a discussion of how they approached actual tasks with children and moves on to explore more generally their orientation to school mathematics, to IMPACT, to schooling and to parental participation in schooling. In addition, basic information about the parents and teachers is collected in the interview. All interviews were audio-tape recorded.

The above gives a brief overview of the design of the study. In such a study the form of the interview and the nature of the sample are obviously of key importance. These are discussed in detail below. Before finalising the interview guidelines and selecting the sample for the main study, the viability of the design and specific research procedures were tested in a pilot study.

## 7.4 The pilot study

Prior to the conduct of the main study, a small pilot study was carried out. The purpose of this study was to test out the viability of the design outlined above and to pilot the

interview schedules. Two schools were chosen for the pilot study. The schools were selected in an attempt to match the anticipated characteristics of the two groups of schools in the main study. The characteristics of the two schools are shown in Table 7.1 below.

| School | Location | Intake |
|---|---|---|
| A | Inner city, situated in the middle of a large local authority housing estate. Most housing high and low rise apartments. | Predominantly working class, some black and ethnic minority pupils, very few pupils from beyond immediate locality. |
| B | Suburban, situated in the centre of a recent private housing development. Most housing detached and semi-detached houses. | Predominantly middle class, very few black and ethnic minority pupils, some pupils from beyond immediate locality., |

*Table 7.1: Characteristics of the pilot study schools*

School A was chosen as an example of an inner city school with a predominantly working class intake, school B as an example of a suburban school with a predominantly middle class intake. Judgement of the characteristics of the intake of the schools was based on discussion with the teachers, the form of housing in the area around the school, observation within the school and on the basis of prior knowledge of the two schools. Both schools had long-standing involvement in IMPACT.

One teacher in each school was interviewed using the draft interview schedule. Notes were made at the time of the interview regarding the degree of match between the intentions behind the questions asked and the apparent interpretations of the teacher. That part of the interview schedule concerned with the selection of the parent sample was also piloted with both teachers to determine whether or not the process was viable. The entire interview was timed in both cases. Following the interview the overall

interview process was discussed with the teacher and comments invited on the content and structure.

These pilot interviews led to minor changes in the schedule. A number of items that appeared not to add anything substantial to the data collected were dropped from the schedule[20] in an attempt to keep the length of the interview under one hour. The method for identification of the parent sample was shown to be viable, although it was noted that there was a great deal of variation in the amount of detail that teachers could give on particular parents.

In each school two parents were also interviewed using the draft schedule for parent interviews. As for the teacher interview, the interview was timed, notes were made on each section of the interview and the interview process was discussed with each parent. This again led to minor changes to the final interview schedule. It was noted that in those cases where very general questions preceded more specific questions (e.g. asking about general feelings about doing school activities at home came before more focused discussion of specific activities that the parent and child had done together) the interviewees had greater difficulty in addressing the question. The final schedule was restructured to minimise the occurrence of this.

In each case the interviews were audio recorded. The extent to which the interviewees felt inhibited by the audio taping was discussed. Whilst it is impossible to determine the effect of tape recording, the purpose of the discussion was to gain some feedback from interviewees that would help to minimise the effect in the main study interviews. It was the intention that both teacher and parent interviews should be relaxed

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[20] For example the questions 'Do you ever feel that you are being judged by the teachers? What do you think the teachers think about you?', whilst addressing an interesting and relevant topic, were found not to be productive. The idea behind the questions was to encourage the parents to reflect on how they might be perceived by teachers. Their response would enable the researcher to judge the extent to which parents appeared to have access to the teacher's principles of evaluation  The form of the questions, however, turned out to be too direct and the parents interviewed in the pilot study were reluctant to address these questions in anything but very general terms. These questions were dropped from the main study schedule as it was felt that other questions addressing related areas were more effective.

and informal, whilst following the basic structure of the schedule. In all cases the interviewees said that they had enjoyed the interview.

In general the pilot study provided an opportunity to rehearse the interview schedule and to test the viability of the process for the selection of the parent sample in two different settings. It also provided the opportunity to gain feedback from parents and teachers regarding the guidelines for the interviews and to revise these accordingly. Attention was paid to ensuring that the resulting teacher interview would take no longer than one hour and that the parent interviews would take no longer than 40 minutes.

## 7.5 Sample

### 7.5.1 Selection of the LEA and schools

In order to control for differences in the level of support provided for IMPACT and other home/school initiatives and to control for other policy, staffing and financing factors, all the schools in the sample need to be in the same LEA. Midbury LEA was selected for the following reasons:

(1) It has long-standing involvement with IMPACT and is seen as exemplifying good practice with respect to both IMPACT and the development of home/school relations more generally;

(2) It has an LEA advisor with specific responsibility for IMPACT through whom detailed information about schools can be obtained;

(3) As a medium sized, industrial city, Midbury has a sufficiently mixed population and wide range of primary schools to allow for the selection of schools in contrasting locations and with differing intake characteristics.

(4) Being outside the London area, there is greater likelihood that none of the LEA staff, schools, teachers or parents are known to the researcher (and vice versa).

Initial contact was made with Ken Thompson, mathematics advisor for Midbury. The above characteristics of the LEA were checked with him and a preliminary list of schools that match the selection criteria (see below) was drawn up. Once the feasibility of carrying out the study in Midbury was established with Mr Thompson, a formal proposal was made to Midbury LEA. All proposals for research to be conducted in Midbury are subject to approval by both LEA officials and a standing committee of headteachers before individual schools can be contacted. Permission to proceed with the research was granted without any request being made for changes to the design.

The design of the study requires that schools minimally meet the following criteria:

(1) They must be primary schools (i.e. there must be both KS1 and KS2 classes in the school);

(2) IMPACT must be well established in the school (i.e. operational for at least three years)

(3) The school must be known to have a positive commitment to IMPACT .

(4) IMPACT must be currently operating in both KS1 and KS2 classes.

(5) The location of the school must be easily identifiable as either inner-city or suburban.

(6) It must be possible to characterise the intake of the school as either predominantly middle class or predominantly working class.

(7) The proportion of children from ethnic minorities within the school must be low.

(8) The situation within the school must be sufficiently stable for continuous participation for the duration of the study.

(9) The headteacher must be willing to allow teachers to be released from teaching to be interviewed.

(10) There must be teachers at both KS1 and KS2 who are willing to take part in the study.

(11) The school must be seen as exemplifying good practice in the implementation of IMPACT

All schools in Midbury which did not meet criterion 1 were excluded from the initial list (information gathered from the 1995 Primary Education Directory). On the basis of information obtained from Mr Thompson, all schools known not to meet criteria 2, 3 and 4 were eliminated from the list. On the basis of information provided by Mr Thompson and readily available demographic information (e.g. population data from the 1991 census) and educational information (e.g. LEA planning information on the catchment areas of primary schools in Midbury) all schools known not to meet criteria 5, 6 and 7 were taken from the list. All information about schools and the social characteristics of areas of Midbury was cross-checked with a colleague familiar with the Midbury and its schools. Finally, on the basis of information provided by Mr Thompson, a small number of schools were removed from the list because they were felt to be unlikely to meet criterion 8. This included a school which was the product of a recent amalgamation, a school with a recently appointed headteacher and a school with a heavy commitment to work with a local university.

This process left a list of 12 schools. Each headteacher was contacted by letter giving a brief outline of the study and asking if they would be willing to take part. This letter was followed up by a phone call one week later in which it was ascertained whether criteria 9 and 10 would be met and to confirm that information relating criteria 1 to 8

was correct (in the case of one school, for instance, it was found that they had stopped using IMPACT this year, in another they had only established IMPACT in KS1 classes). From these discussions with headteachers, four schools which met the criteria 1 to 10 were selected (taking into account that two of the schools must be suburban with a predominantly middle class intake and two must be inner-city with a predominantly working class intake). The selection of these schools from those that met all the criteria was based on the extent to which, on the information available at that time, they was felt to be the greatest certainty with regard to criteria 5 to 8 and the extent to which, on the basis of the account given by Mr Thompson, they met criterion 11.

The characteristics of the schools selected, based on the information available at the time, are given in Table 7.2 (overpage). As can be seen from the table, two of the schools are inner city schools, with a predominantly working class intake (Sugden Street Primary School and Penbury Primary School) and two are suburban schools with a predominantly middle class intake (Chelmer Grove Primary School and Higham Green Primary School). Higham Green and Chelmer Grove are neighbouring schools situated on the outskirts of Midbury. Both lie outside the outer ring-road encircling Midbury. The housing in the area served by the schools had been built in a succession of private housing developments from the late 1950s onwards. As would be expected, given the housing in the area, in both cases the school buildings were modern.

Both Sugden Street and Penbury are situated in densely populated areas close to the city centre. The housing within the catchment areas of these schools is predominantly small Victorian terraced housing. Sugden Street school had been relocated several years earlier and had moved into a new building of a semi-open plan design with shared resource areas between classrooms. The school is located close to an industrial estate. Penbury has a Victorian building which has been remodelled (e.g. the walls between some pairs of classrooms had been knocked down to make larger rooms). Penbury had

been designated a community school which means that adult education courses run in the school building during the day and in the evening.

| School | Housing in catchment area | Intake |
|---|---|---|
| **Chelmer Grove** | Suburban, private housing estate, mostly owner occupied, mostly houses built between late 1950s and present, detached or semi-detached, some blocks of flats, small amount of local authority housing. | Largely middle class, few children from black or ethnic minority families. |
| **Higham Green** | Suburban, private housing estate, mostly owner occupied, mostly houses built between late 1950s and present, detached or semi-detached, some blocks of flats, small amount of local authority housing. | Largely middle class, few children from black or ethnic minority families. |
| **Penbury** | Inner city, largely small Victorian terraced houses, mixture of owner occupied, rented and local authority housing. | Largely working class, few children from black or ethnic minority families. |
| **Sugden Road** | Inner city, largely small Victorian terraced houses, predominantly rented and local authority housing. | Largely working class, few children from black or ethnic minority families. |

*Table 7.2: Characteristics of the Midbury study schools*

Initial judgements of the social characteristics of the intake of each school were made on the basis of the information provided by the LEA advisor and the headteachers[21].

[21] In an earlier study Brown (1985) compared the characterisation (in terms of social class and ethnicity) of the intake of primary schools made by headteachers with information about the social characteristics of the population within the catchment area of the schools drawn from national census small area statistics. It was found that the judgements of the headteachers were in line with the results of the analysis of the census material. The present study appears to bear this out in general terms (that is that

More detailed information on which to base a more precise assessment of the social class position of individual parents was gathered from the parent interviews. This makes possible a more accurate assessment of the social class (in the nominal sense) characteristics of the intakes of the schools selected than was possible at the point of selection of the school sample. Differences between the ideal sample and the eventual sample, and the consequences of these for the study, are discussed in Section 9.2.

### 7.5.2 SELECTION OF THE TEACHER SAMPLE

Two teachers from each school were selected for interview. The following criteria were used for selection.

(1) Both teachers must be well established with at least three years experience of using IMPACT within the school..

(2) One of the teachers should currently have a KS1 class, the other a KS2 class.

(3) One of the teachers should have responsibility for the operation of IMPACT within the school.

(4) Both teachers should be willing to be interviewed and willing to discuss the selection of the parent sample.

In each school the mathematics co-ordinator was selected by the headteacher and the advice of the headteacher or the mathematics co-ordinator taken regarding the selection of the other teacher in accordance with the above criteria. The basic characteristics of the teacher sample are shown in Table 7.3 below.

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the overall picture of the intake of the school given by the headteacher appears to be accurate) but the teachers appear not to have sufficient knowledge of particular parents to be able to make accurate judgements in specific cases. This places us in the interesting position of having overall judgements of intakes as being, say, predominately middle class but without this being based on judgements of the

| School | Teacher | Year group | Years of IMPACT | Responsibility for maths |
|---|---|---|---|---|
| Chelmer Grove | Rachel Chadwick | Y5/6 (KS2) | 3 | Mathematics co-ordinator |
| | Jeff Harper | Y1/2 (KS1) | 3 | |
| Higham Green | Pauline Harrison | Y2 (KS1) | 3 | Mathematics co-ordinator |
| | Liz Mercer | Y3/4 (KS2) | 3 | |
| Penbury | John Gibbs | Y3/4 (KS2) | 6 | Mathematics co-ordinator |
| | Freda Rose | R (KS1) | 6 | |
| Sugden Road | Sarah Williams | Y5/6 (KS2) | 6 | Mathematics co-ordinator |
| | Karen Shepherd | Y1/2 (KS1) | 6 | |

*Table 7.3: Teacher sample*

This form of selection of the teacher sample was adopted to ensure that the teachers interviewed were most likely to exemplify what was seen within the school as being good practice in the conduct of IMPACT. In each school the mathematics co-ordinator had responsibility for IMPACT throughout the school.

### 7.5.3 SELECTION OF THE PARENT SAMPLE

The parents were selected on the basis of information gathered in discussion with the teacher (conducted as part of the teacher interview). Four families from the class of each teacher interviewed were selected for interview. In each case two families that were considered by the teacher to be enthusiastic (+) about IMPACT and two who were considered to be unenthusiastic (–) were chosen. A motivational factor was chosen to distinguish between parents as the focus of the study is on pedagogic practice and whether or not parents are positively disposed towards participation in IMPACT

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social class of particular parents.

activities not on differences in the level of attainment of the children. The process of selection was as follows:

(1) Each teacher was asked to provide a class list (or, in those cases where the teachers taught a maths set or group rather than their own class, a list of the children in their set or group) prior to the interview.

(2) As teachers mentioned specific children or parents in the interview (e.g. when discussing the work produced by parents and children in response to Q. 2.12) this was noted with reference to the list.

(3) For those questions designed to elicit specific information about parents (Section 3) and children (Section 4) brief notes were made.

(4) At that point of the interview where the parents were to be selected for interview (Section 6), those parents who had been identified as most enthusiastic (Q. 3.5) and least enthusiastic (Q. 3.6) were discussed again with reference to the notes made earlier. Two families from each list were selected for interview. An additional one family from each list was also chosen in case it was not possible for some reason to interview the parents initially chosen.

All parents selected met the following criteria:

(1) They were identified by the teacher as being either enthusiastic (+) or unenthusiastic (–) about IMPACT.

(2) They were known to the teacher and the teacher could provide some background information.

(3) There were no known factors that might make an interview inadvisable (e.g. some families who were felt to be under substantial stress were excluded from the sample).

The resulting sample had the following characteristics:

| | Inner city | Suburban |
|---|---|---|
| KS1 | 4(+) 4(–) | 4(+) 4(–) |
| KS2 | 4(+) 4(–) | 4(+) 4(–) |

*Table 7.4: Parent sample 1*

All parents were initially contacted by letter. Once contact was established appointments were made for the interview by telephone, letter or in person. In making the appointments interviewees were given the choice of meeting in school or at home and either in the daytime or in the evening. All parents were told that the interview should be with the parent who most frequently does the IMPACT activities. In those cases where both parents were equally involved in doing IMPACT both parents were interviewed.

### 7.5.4 THE CHARACTERISTICS OF THE PARENT SAMPLE

Twenty-eight interviews were conducted. At one school (Chelmer Grove), the headteacher's illness led to organisational and managerial changes within the school, which in turn produced difficulties for staff and uncertainty amongst parents. This made it inadvisable to complete the parent interviews. Four out of the eight planned interviews with parents from this school were conducted. Although this affected the total number of interviews conducted, it did not affect the distribution with respect to age of children, enthusiasm for IMPACT nor the overall social class distribution of the sample (see Section 9.2 for discussion of this) and so it was decided not to seek replacements but to leave the total parent sample as 28.

Other factors affecting the final parent sample are:

(i) Many of the parents had children in more than one class. In those cases where parents had children in both the sample classes both sets of activities were discussed (marked with an asterix in the fourth column of Table 7.5). In those where this was not the case comparisons could be made between the engagement of the older and younger children with the IMPACT activities but without reference to the activities discussed by one of the teachers.

(ii) The two suburban schools (Chelmer Grove and Higham Green) had a more socially diverse intake than anticipated. The private housing estate within which both schools were located had undergone two phases of development. Many of the older houses (built in the late 1950s and early 1960s) were occupied by semi-skilled and skilled technical workers employed at nearby engineering works whereas the houses built more recently had been bought by young professionals not working in the immediate locality. Although the division was not strict, residents were acutely aware of these social differences and they were frequently mentioned or alluded to in interviews. They were not, however, mentioned at all by the teachers.

(iii) A disproportionately high number of middle class parents were interviewed from the mixed intake urban school (Penbury). With the social class mix of interviewees from the suburban areas noted above, however, this gave a good social class balance across the sample (to be discussed in more detail later).

(iv) For each family the interview was conducted with the parent who most often carried out the IMPACT activities with their child or children. In the majority

of cases (21) this was the mother, in two cases the father and in four cases both the mother and father were interviewed together.

The final parent sample is shown in Table 7.5 below.

| School | Class teacher | Parents interviewed | Children | +/– |
|---|---|---|---|---|
| Chelmer Grove | Rachel Chadwick (KS2) | Helen Winters | KS2 | – |
| | | Geoff and Sue Hudson | KS1 & 2 | + |
| | Jeff Harper (KS1) | Joanna Geary | KS1 | – |
| | | Debbie Peters | KS1 & 2* | + |
| Higham Green | Liz Mercer (KS2) | Alan and Carol Easthope | KS2 | + |
| | | Ian and Sophie Chapman | KS1 & 2 | – |
| | | Kate Murray | KS1 & 2* | + |
| | | Alison Stuart | KS1 & 2 | – |
| | Pauline Harrison (KS1) | Elisabeth Howells | KS1 & 2 | – |
| | | Joan Patrick | KS1 | + |
| | | Angie House | KS1 | – |
| | | Trevor and Ann Paice | KS1 | + |
| Penbury | John Gibbs (KS2) | Tom Barton | KS1 & 2* | – |
| | | Emma Kirkwood | KS2 | + |
| | | Heather Powell | KS1 & 2 | + |
| | | Louise Burbridge | KS1 & 2 | – |
| | Freda Rose (KS1) | Anwar Khan | KS1 & 2 | – |
| | | Sian Parry | KS1 | + |
| | | Caroline Greenaway | KS1 | – |
| | | Irene Collins | KS1 & 2 | + |
| Sugden Road | Sarah Williams (KS2) | Sharon Baker | KS1 & 2* | + |
| | | Judy Drake | KS2 | + |
| | | Janet Woods | KS1 & 2* | – |
| | | Charles Olowe | KS1 & 2* | – |
| | Karen Shepherd (KS1) | Susan Thomas | KS1 | – |
| | | Julie Rawlings | KS1 & 2 | + |
| | | Mary Gibson | KS1 | – |
| | | Vicky Bremner | KS1 & 2 | + |

*Table 7.5: Parent sample 2*

## 7.6 The interview schedules

As previously stated, there is an extent to which the interviews with the teachers and the interviews with the parents mirror each other. The actual IMPACT tasks used by the teachers interviewed are identified and discussed with them. These same tasks are then

discussed with the parents who have used them with their children at home. In order to enable some comparison to be made across the whole sample an additional task ('How much is your hand worth'—see Figure 5.9) was selected from the IMPACT activity packs to discuss with all the parents and teachers interviewed.

The schedules for the teacher and the parent interviews (see Appendices 3 and 4 respectively) are designed as guidelines for semi-structured interviews. Whilst the overall structure of each interview is important, and particular sections of the interview have to be conducted in the manner specified in the schedule, there is some flexibility in terms of the ordering of informational items. It was assumed that some information, for instance where the parents usually carried out the IMPACT tasks, might be given spontaneously early in the interview, thus making the later question on this topic redundant. Thus it is not intended that all the questions have to be addressed in exactly the same order in every interview.

### 7.6.1 THE TEACHER INTERVIEW

The broad objectives of the interviews with teachers are:

(1) to gather background information on the teacher, the children, the parents and the school;

(2) to consider the selection and evaluation of IMPACT tasks, the orientation of the teacher towards IMPACT and the form in which the teacher implements IMPACT;

(3) to discuss parents and parental participation;

(4) to identify the specific IMPACT activities to be discussed with parents;

(5) to provide the information on which to base the selection of parents to be interviewed.

The introductory statement places the interview in context and positions the interviewer with respect to the IMPACT project and the interviewee. The intention here is to indicate that this is, as far as is possible in an interview situation, a discussion between fellow education professionals. Confidentiality and anonymity are assured and a request for the interview to be audio tape recorded is made. The interview itself comprises seven sections:

(1) Teacher participation: questions concerning the current responsibilities of the teacher and their involvement in IMPACT.

(2) IMPACT tasks: discussion of how the teacher operates IMPACT, the particular IMPACT tasks sent home, the products of these tasks, the teacher's evaluation and analysis of the task, and the parents' responses.

(3) Parent participation: discussion of who regularly takes part in IMPACT, who does the tasks with the children at home and which parents are felt to be enthusiastic and which unenthusiastic.

(4) Children: discussion of the attainment of children both in general terms and in mathematics specifically.

(5) IMPACT: discussion of the teacher's views of the benefits of IMPACT to themselves, parents and children.

(6) Selection of parents: discussion of parents in the most and least enthusiastic categories in order to select parents to be interviewed.

(7) Closing activity: discussion of the IMPACT task 'How Much is Your Hand Worth', plus two closing questions on parental participation in education.

The questions in Section 1 are informational. Section 2 constitutes the major part of the interview. Questions 2.1 and 2.2 seek information about the teacher's practice. The second part of 2.2 requires the teacher to explain why they have chosen to differentiate

or not. Questions 2.3 to 2.8 focus in on one particular IMPACT task they have used and ask the teacher to describe and evaluate the task, the outcomes and the responses from parents. These questions are an attempt to draw out, with specific reference to one task and the children they are currently working with, the teachers principles of selection and evaluation. Question 2.9 asks the teacher to state how they think parents should have, ideally, carried out the task. Questions 2.10 to 2.17 repeat this process for another task, judged by the teacher to be either more or less successful than the first one. The process is then repeated for up to two more tasks.

This process identifies between two and four tasks (both, in the opinion of the teacher, successful and unsuccessful) used by the teacher with their current class or maths group which can be discussed in the parent interviews. The questions generate a set of descriptions and evaluations spanning a range of tasks and related specifically to particular children and their parents. They also generate teacher descriptions of their ideal realisation of each task. Analysis of these accounts enables us to begin to describe the teachers' principles of selection and evaluation of the tasks, evaluation of outcomes and positioning of parents. These teacher accounts can be compared with each parent's description of how they carried out the task, what they felt the point of the task to be and so on.

Question 2.18 asks the teacher to relate the tasks discussed to each other and question 2.19 asks them to consider IMPACT activities more generally. These two questions shift the teacher's attention from the particular to the general. Question 2.20 asks the teachers to consider the tasks they use in relation to gender. The remaining questions in Section 2 explore the specific IMPACT practices of the teacher and their reflections on these.

Section 3 explores the extent and form of participation in IMPACT (Q. 3.1, Q. 3.5), the practices adopted by the teacher to deal with non-participation (Q. 3.4) and the teachers views on the reasons for non-participation (Q. 3.2, Q. 3.3). These questions

both provide information about the form of realisation of IMPACT within each teachers class and provide accounts that give insight into the manner in which parents are evaluated and positioned by the teacher. Questions 3.6 and 3.7 serve as the basis for selection of the parent sample by identifying the parents seen as being enthusiastic and unenthusiastic by the teacher. Discussion of each parent mentioned by the teacher also provides another context for the exploration of the teachers evaluation and positioning of parents (through, for example, the particular characteristics of parents and families that are spontaneously mentioned by teachers). With respect to the parents who are actually interviewed, these two questions also provide an opportunity to check the extent and accuracy of the teacher's knowledge of particular parents.

The questions in Section 4 are designed to gather information about the attainment of children in the class with respect to mathematics (Q. 4.2) and more generally (Q 4.1). This can be related back to the discussion of enthusiastic and unenthusiastic parents and the teacher's view of the relationship between parental enthusiasm for IMPACT and attainment of children explored. Section 5 shifts attention to IMPACT in more general terms. The questions seek the teacher's opinions of the purpose of IMPACT (Q. 5.1) and the benefits to themselves, to parents and to children. In Section 6 of the interview, the parents to be interviewed are selected and discussed (this process is considered in detail in discussion of the selection of the parent sample).

In the final part of the interview all the teachers are presented with the IMPACT task 'How much is your hand worth?' (see discussion of this task in Chapter 5. It was chosen because (i) it has been identified as an exemplary IMPACT activity; (ii) it is accessible and not mathematically daunting; (iii) as it is relatively inexplicit in terms of the possible educational value of the task it might be supposed that teachers' discussion of its mathematical potential and accounts of the way it would be approached by parents will differ from the accounts given by parents.

The final two questions invite the teacher to consider how far parental participation should go (Q. 7.2) and ask the teachers who are parents to discuss themselves as parents and place themselves with respect to participation in their own children's schooling. These questions are placed at the end of the schedule because they explore issues that might, had they been asked earlier, have directed the teachers away from the central concerns of the study. The complete teacher interview schedule is given in Appendix 3.

### 7.6.2 THE PARENT INTERVIEW

The broad objectives of the interview with parents are:

(1) to gather background information about the parents and children;

(2) to consider specific IMPACT activities, how the parents carry out IMPACT tasks, thoughts about IMPACT and relations with the school;

(3) to discuss school mathematics.

The opening statement given in the interview guidelines (see Appendix 4) places the interview in context and positions the interviewer with respect to the IMPACT project, the school and the interviewee. The intention here is to establish with the interviewees that the interviewer is neither linked to the school nor to the IMPACT project, but rather has a general interest in how parents do the IMPACT activities at home and wishes to discuss their thoughts about IMPACT with them. With this respect to this, the assurance of confidentiality and anonymity is essential. It is important that interviewees are quite sure that nothing they say will be 'reported' back to the school and that in any descriptions of research they will not be identified. A request for the interview to be audio tape recorded is made. The period before the main interview is also used to establish as relaxed an atmosphere as is possible within the constraints of an interview. This is an important phase in the interview as it is acknowledged that some parents will

feel more at ease in an interview situation than others. The interview itself comprises five sections:

(1) IMPACT tasks: discussion of a selection of IMPACT tasks that the parents has carried out with their child.

(2) School mathematics: consideration of practices within the home in relation to school mathematics and the parent's confidence in helping their child.

(3) IMPACT: questions relating to how each parent approaches IMPACT in general and about the perceived benefits of IMPACT.

(4) Relations with school: discussion of the parent's involvement in schooling and relations with their child's school.

(5) General: gathering of information on the occupation, education, qualifications and aspirations of parents.

The first question in Section 1 of the interview (Q 1.1) asks the parent to look briefly at all the tasks that have been discussed with the teacher and which the parent should have done with their child. The purpose of this question is to refresh the parent's memory, to check that all the activities have been done by them and to lead into the selection of the first task to be discussed. Questions 1.2 and 1.3 focus on each task in turn. Q 1.2 addresses task realisation in procedural terms and asks for an account of what happened from the parent's viewpoint. No request is made for any analysis of the task at this stage. Questions 1.3 comprises of a cluster of questions each of which entails some form of analysis of the tasks and their realisation by the interviewee. The questions area asked in turn. They explicitly direct the interviewee to consider what the task is designed to teach, how it achieves this and how it relates to the teaching and learning of school mathematics. Once these questions have been addressed for all the activities, the relative success of the tasks is discussed and criteria for the judgement of success

elicited (Q 1.5, Q 1.6). The criteria are represented to the interviewee as a check. These questions enable exploration of differences in success criteria between parents and between the teachers and parents. Question 1.7 is designed to explore the relationship between the tasks and the parents' perceptions of the competence and disposition of their children and to explore the strategies employed by the parent when their children encounter difficulties. The final question in the first section (Q 1.8) presents the interviewees with the same task to discuss ('How much is your hand worth?'—also discussed with each of the teachers). The questions relating to this task mirror those asked when addressing the tasks they have carried out with their children. This enables comparisons to be made between the form of account of the projected realisation of the task by parents and the ideal realisation of the task presented by teachers.

The first question in the second section (Q 2.1) is intended to give some indication of each parent's level of confidence with school maths and to see at what point in their child's educational career this might change. The following two questions address the other activities, if any, which the interviewee do with their children to help with school maths (Q 2.2) and to compare their perceptions of the effectiveness of these with the IMPACT tasks (Q 2.3). This allows IMPACT to be considered in the context of the wider range of local pedagogic practices which, in the view of the parent, relate to school mathematics. The final cluster of questions in this section (Q 2.4) invites the interviewee to make an explicit comparison between their own experience of being taught mathematics with that of their child.

The third section of the interview is designed to collect information about mode of participation in IMPACT and about the settings within which IMPACT activities are realised. This includes questions relating to who does the activities (Q 3.1, Q 3.3), wider discussion of the activities within the family and beyond (Q 3.2), the marking out of particular places and times for IMPACT tasks (Q 3.4) and difficulties relating to materials (Q 3.5), time (Q 3.6) and motivation (Q 3.7). The questions in this section

also explore the orientation of the interviewee towards IMPACT in terms of their enthusiasm for IMPACT (Q 3.8, Q 3.9), their perceptions of the benefits of IMPACT (Q 3.11) and ideas about the way in which IMPACT could be improved (Q 3.10). The final cluster of questions in this section (Q 3.12) relate to how the interviewee completes the IMPACT diary and what they think happens to the comments they make. As with the questions in the other sections, I am interested in both the form and content of the responses given by the interviewees.

The fourth section addresses general relations with the school. In discussing levels of participation (Q 4.1) and feelings about greater involvement (Q 4.2) judgements can be made about how the parents position themselves with respect to the school and what they view as legitimate forms of involvement. This is extended in consideration of the how the parents would approach problems with school experienced by their children (Q 4.3) and discussion of aspects of their child's schooling about which they feel they are not being given sufficient information (Q 4.4).

The questions in the final section of the interview are intended to collect information about occupational history (Q 5.1), educational experience and qualifications (Q 5.2) and aspirations (Q 5.3) that enable grouping of parents in social class categories and construction of pedagogic biographies. Much of this information would be collected in the general conduct of the interview. The questions in this section would only be asked if this information had not been collected incidentally in the course of the interview. The complete parent interview schedule is given in Appendix 4.

### 7.6.3 Conduct of the interviews

All the interviews with teachers were conducted at their school during school time. A fee was paid to the school for one half day supply cover per teacher to facilitate this. The teachers were asked to send in advance a list of the children in their class or maths group and copies of the IMPACT activities sent home since the beginning of the school

year. They were asked to bring other supporting material (such as examples of children's work and IMPACT diaries) if it was available at the time. Each interview took about one hour. The interviews were audio-tape recorded.

The interviews with parents were held either in their homes or in school, either during the daytime or in the evening. The choice of venue and time was made by the interviewees. Each interview took around 40 minutes. All the interviews were audio-tape recorded.

In all cases, the guidelines drawn up provided the basic structure for the interview and defined the areas to be covered and the contexts within which discussion of particular topics took place. A degree of flexibility was allowed in order to maintain, as far as possible, an informal and relaxed atmosphere. Thus, if the interviewee spontaneously raised an issue in the early part of the interview which was to be covered later in the interview schedule, discussion was allowed to continue until there was an opportunity to return to the order given in the guidelines.

It was intended that the teacher interviews had an atmosphere similar, as far as is possible, to that of a discussion between professional colleagues. All the teachers interviewed were told that I was formerly a primary school teacher and that I was now involved in primary teacher education with trainee teachers, newly qualified teachers and experienced teachers. They were also told that I had the full co-operation of the IMPACT directors in the conduct of the research but that I was not a member of the IMPACT team and that the research being conducted was independent. Parents were told that I was a carrying out research into IMPACT and that I had little knowledge of the school or of the area. All interviewees were assured anonymity and confidentiality.

The assumptions that the interviewee makes about the interviewer and the effects of relative status and other interpersonal factors on the kinds of statements made by interviewees is obviously important here. In the case of the teacher interviews, the known status of the interviewer as a former primary teacher may signal to the teacher

the acceptability of the use of technical language and specialised terms. The result is a form of professional discourse which is, it must be assumed, somewhat different from the form of discourse engaged in when talking to parents (this, of course, raises the question of the form of interaction between teachers and parents who are also teachers). In such professional discussions much is taken for granted in what is said and certain interests are assumed. The presence of elements of professional discourse in the interviews with the teachers can be taken as an indicator that the intended collegial relationship has been established in the conduct of the interview.

There are also questions of status to be addressed. The interviewer, as a teacher educator and researcher, might be seen as in a position of evaluation of the teacher. The relative status of the teacher and the teacher educator obviously varies with context (see Brown, 1992; Menter, 1989). Here, however, the teacher is being interviewed and questioned about elements of their practice by someone who, they might assume, has, by virtue of their work, a more generalised, and perhaps more discursively elaborated, knowledge of the practices of primary teaching, i.e. the interviewer has not only been a practitioner themselves but may have also developed a knowledge, through their work, of the practices of a wider range of teachers and have, in their work on the initial education and further professional development of teachers, had to elaborate what might be considered to be 'good practice' and the discursive basis for this. Moreover, despite attempts to present the research being conducted as independent of the IMPACT project, the interviewer might be presumed to have a wider and more generalised knowledge of the rhetoric and practices of IMPACT.

The context in which the interview takes place does not formally place the interviewer and interviewee in a situation in which the former is evaluating the latter in that there are no tangible professional consequences for the interviewee of statements made within the interview. At an interpersonal level there must, however, be an awareness that the interviewer has the discursive resources to make professional

judgements about both the teachers' general primary practice and their operationalisation of IMPACT on the basis of the accounts they give. The question being raised here is one that is often neglected in research using interviews as a source of data. It is trivial to state that when a teacher talks about a parent they are giving their own account of the parent and that what they say cannot be taken as an account of what, for instance, the parent actually does or feels. It is clear that these statements *can* tell us is what it is, for instance, that the teacher considers to be important about the attitudes of parents to, say, IMPACT tasks. In determining what is being relayed in and through the interview it *is* important, however, to ask to whom the statements being made are addressed and thus what kind of display is being made. In the interviews with teachers being discussed here, the possibility that the interviewer is in a position to make a professional evaluation of the teacher has to be taken into account. The teacher must thus be seen as deploying a range of positioning strategies not just in their positioning of parents and of themselves with respect to parents, but also in positioning themselves with respect to the interviewer. The accounts that teachers give of their own practice must thus be considered as idealised to the extent that, for instance, they are aware of the ideal realisation of IMPACT and are aware that the interviewer is aware of this.

There is no sense in which the form of relation between interviewer and interviewee is being viewed as a negative or limiting factor in the conduct and analysis of the interview, but rather it is being seen as important to acknowledge and account for in the analysis. There is never 'no relation'. What varies between interviews is the extent to which the relation can be known and accounted for. In the interviews with teachers the establishment of a collegial relation is, for the purpose of this study, a desirable characteristic in that it enables exploration of the professional discourse of teachers.

The situation with parents is also complex. Whilst the information about the research and the researcher supplied to parents was simple and uniform, it will have been differently interpreted. The focus of the interview on IMPACT led some parents to

assume that the interviewer was an expert on the realisation of IMPACT tasks and they quite reasonably sought advice on how to do them, whilst other parents presumed that there was a critical distance between the interviewer as researcher and the practice of doing IMPACT and began themselves to address more abstract questions of parental involvement in schooling. There were thus differences in the positioning of parents with respect to the interviewer. Once again these differences need to be accounted for in the analysis of the data drawn from the interviews.

## 7.7 Form of analysis

Whilst the same general methodological perspective is maintained throughout the study, there is variation in the details of the form of analysis of the different types of data collected. The differences are both (i) operational, in the sense that the manner in which interview material is processed and worked with will differ from, say, the handling of public, printed text, and (ii) analytic, in the sense that the purpose, depth and level of detail of the scrutiny of the data will vary between the various components of the study. In this section, an overview will be given of the manner in which the interview material was prepared for analysis and how the analysis was carried out, including the use of networks.

### 7.7.1 Preparation of data for analysis

All the interviews were transcribed in full (see Appendix 5 for the transcription notation used). Each transcript was printed out as double spaced text with line numbers. The transcripts were checked against the audio tapes. All transcript files were kept as Microsoft Word files and as plain text files for analysis using a microcomputer. The teacher interviews and the parents interviews were analysed separately. The analysis of transcripts followed the following sequence.

(1) Demographic and descriptive data were identified and entered into tables (e.g. for teachers details of the class taught, number of years of IMPACT work and so on, for parents details of ages of children, occupation, housing and so on).

(2) Printed transcripts were read through and marginal notes made. Using a word processor outlining programme, sections from each of the interviews were placed in preliminary categories. Categories were refined and subcategories developed to more precisely account for the data. The copying and pasting of data from transcript files to the outliner enabled a check on the exhaustiveness of the categorisation to be made.

(3) From the categorisation of data, initial networks (see below for discussion) were drawn up for the fine coding of specific segments of the data (principally those relating to parents' accounts of the realisation of and their analysis of IMPACT tasks). The networks were constantly checked against the data and refined if found not to adequately account for the data. Once networks were finalised, coding of the interviews was carried out using the HyperResearch analysis program.

### 7.7.2 THE DEVELOPMENT OF CODES, CATEGORIES AND NETWORKS

The use of networks in the analysis of the comments made by parents in IMPACT diaries followed the form of analysis developed by Bernstein and colleagues (see discussion in Chapter 6). The data collected through the interviews with parents and teachers is far more extensive and, as can be seen from the discussion of the design of the interviews (see Section 7.6 above), can be divided into a number of segments each corresponding to a particular aspect of the study.

The interview data are not analysed question by question. The schedules acted as guidelines to guarantee that all areas of concern were covered in each interview and to ensure a high degree of consistency between interviews, particularly in the discussion of the IMPACT tasks. In the analysis of the data, material relevant to each broad topic was drawn together. For instance, parents provided information about their educational background and pedagogic biography at various points in the interview, not just in response to a particular question concerning these issues. Similarly, in drawing out the criteria used by teachers in the selection of the tasks, I had to look at their responses to a number of questions. Although each of the questions are designed to elicit particular types of information or to initiate a particular form of activity or discussion, the nature of the interview is such that it cannot be predicted where in the interview material relevant to particular phases or areas of the analysis will be present. As has been seen from the discussion of the design of the interviews, a number of areas of relevance to the research questions are defined in advance (e.g. details of who does the IMPACT activities with the child, when and where). A number of others, however, emerged in the analysis of the data (e.g. the influence of the form of a parent's involvement in and experience of schooling)

The nature of the analysis requires working through the transcripts many times in the development of coding schemes. The qualitative analysis program HyperResearch was used to enable coded material to be easily recalled, checked and compared (see Tesch, 1990, for a description of the general principles underlying this kind of program and for specific details of HyperResearch). The use of this program also enabled codes to be reviewed, changed and combined at any stage in the analysis and for transcripts to be searched for the presence or absence of specified codes or combinations of codes. Most importantly, the program makes it easy to ascribe multiple codes to any given segment of a transcript. The full facilities offered by the program were not used as, in common with other qualitative analysis programs, particular assumptions are made about the

nature of qualitative analysis in the design of the program that are in conflict with the approach being taken to analysis here (see discussion of the use of computers in the analysis of qualitative data in, for example, Miles & Huberman, 1994; Dey, 1993; Coffey & Atkinson, 1996).

A variety of kinds of coding are used in the analysis of the interview data. In some cases the coding consists of the identification of portions of the interview that allow the interviewee to be classified in some way. An example of this would be the classification of parents in terms of social class or in terms of level of mathematical qualifications. In other cases, the coding constitutes the representation of a range of possibilities with respect to a particular variable. For instance, prior to the interviews it was not possible to map the range of sources of information used by teachers in making judgements about parents or to map out criteria used by teachers in the selection of tasks. In these cases descriptive codes are developed in working through the interview transcripts. In these cases the codes represent categories of related phenomena. The categories have to be adequately described, coherent and consistent. Together the codes developed in each area represent a reservoir of possibilities, from which the repertoire of an interviewee can be described. In the description of the teachers' criteria for the selection of activities, for instance, a range of criteria drawn from the interviews has been constructed and the repertoires of each individual, on the basis of the interviews, are described in relation to these. It is possible to draw up networks from this kind of descriptive coding, as long as the categories constitute some form of system within which hierarchical relations can be established. These forms of descriptive networks can be useful in organising and presenting data (see, Bliss, Monk and Ogborn, 1983, for some examples of networks of this kind).

The analysis of the diaries presented in Chapter 6 represents a very different approach to coding and the construction of networks. Here the networks represent systems of semantic possibilities within which the particular selections of individual

respondents can be described. Here the coding of a particular comment represents the tracing of a particular pathway through the network—an endpoint that is the result of a sequence of selections (either tacit or explicit). The networks are theoretically motivated. In the case of a particular question, an initial theorising of the semantic space constructed by the question and the potential options and choices which inhere in the space is required. This is developed by interaction with the language of enactment. The networks for the diary coding were thus worked up in a dialogic movement between an initial theoretical orientation and the diary data.

I have used networks of this sort in the analysis of parents' descriptions of the IMPACT tasks they have done with their children, principally in their responses to the questions in Part 1 of the parent interview. As a starting point I have taken the diary network and applied it to the analysis of this part of the interviews. This led to the modification of the network. I have presented the revised network (with descriptions and examples) in Chapter 11.

## 7.8 Conclusion

In this Chapter I have presented an outline of the design and conduct of the study of teachers and parents based in four Midbury schools. As well as presenting key issues in the design and conduct of this empirical work, I have discussed the manner in which I have approached the analysis of the data. The results of the analysis are presented in the following three chapters. Chapter 8 presents the outcome of the analysis of the teacher interviews. This chapter focuses on the manner in which the teachers select, interpret and evaluate IMPACT tasks. I also describe the manner in which the teachers evaluate and position parents and how they position themselves in relation to the IMPACT project. The results of the analysis of the parent interviews are presented in Chapters 9, 10 and 11. Chapter 9 focuses on the exploration of the relationship between social class

and pedagogic biography and the conditions of realisation of IMPACT tasks in the home, orientation to official pedagogic practice and modality of local pedagogic practice. Chapters 10 and 11 present the outcomes of the analysis of parents' discussion of IMPACT tasks.

# Chapter 8 Midbury teachers: official pedagogic practice, the pedagogic potential of the home and the positioning of parents

## 8.1 Introduction

Thus far in this study it has been assumed that in the selection of tasks and the evaluation of outcomes teachers draw on a body of professional knowledge and experience that is not necessarily available to the parents who are asked to carry out the tasks with their own children at home. Whilst examples of the operation of shared, tacit criteria for the evaluation of the outcomes of tasks have been drawn from the IMPACT meetings, nowhere has it been possible to examine empirically, in a detailed way, the criteria themselves and the manner in which they operate in the specific context of the teacher's judgement of work carried out by parents and children at home. In the analysis that follows, working from the interviews with teachers, I will identify a range of criteria for the selection of IMPACT tasks used by the teachers in the sample. As with the earlier analysis, the focus will be on the degree of localisation/generalisation of both the resources on which the teacher draws (i.e. the principles of selection) and the manner in which they are deployed in specific practices (i.e. the mode of realisation).

In Section Two of the interview, each teacher is asked to discuss the particular tasks that they have sent home for parents and children to do together. For each activity they are asked to discuss the range of responses they received from parents (Q. 2.3), the range of work brought back to school by the children (and to evaluate this and explain the basis for their evaluation—Q. 2.4 & 2.5), make an evaluation of the task (Q. 2.6) and explain what they see the purpose of the task as being (Q. 2.7). They are also asked to describe how they think parents should have carried out the task (Q 2.9) and, moving beyond the specific task in question, to describe what they think makes a good

IMPACT task (Q. 2.19). As discussed in the previous chapter, the interview is structured in such a way as to shift the attention of the teacher from consideration of particular responses to and outcomes from specific tasks to overall evaluations of specific tasks and then to generalised statements about IMPACT tasks. The intention here is to move between practices—e.g. from accounts of what particular parent/child couples did in response to a given task to an evaluation based on the outcomes of a task with a class of children to consideration of tasks in relation to the IMPACT project more widely. This elicits teacher judgements in such a way that (i) the principles of selection and evaluation can be identified from what they say and (ii) the manner in which the judgements made relate to the specific practice can be described. In beginning the analysis of the teacher interviews I start with the question 'how do these teachers select tasks?'

## 8.2 Selection of tasks

From the teachers' accounts it is possible to explore the process of selection of suitable tasks and from this to draw out a number of criteria for selection of tasks. It is important to bear in mind that there is no attempt here to argue that a general description of the process of selection is being produced but rather that, through the accounts given by these teachers, it is possible to identify the factors at play, and the resources drawn on, in identifying suitable tasks. This enables a comparison to be made with the accounts given by parents and the apparent presence or absence of access to the discursive principles and resources drawn on by teachers. This is, in other words, laying the foundations for specifying what it is that distinguishes teachers from parents and how parents are placed with respect to teachers in their judgements and practices.

In the discussion of selection of tasks, teachers are being asked both to identify what constitutes a 'good task' in rather abstract terms and to discuss the suitability of

particular tasks for the particular children in their class. A distinction, consistent with the analysis of parents' comments in Chapter 6, can be made between generalised criteria for selection and localised criteria. Generalised criteria draw on resources that are not specific to the context of realisation of the activity. Thus, those criteria for selection of tasks that draw on knowledge of the mathematics curriculum, can be considered to be generalised as, in making decisions about the appropriateness of tasks they can be brought to bear on different contexts, different school classes, different individuals. Localised criteria are those that are more specifically task related; the selection of activities on the basis of knowledge of the likes and dislikes of particular children within a class would be an example. In this case the resources on which the teacher draws to select an appropriate task become less useful, if not redundant, as soon as they move beyond the specific class about which they have this knowledge. It is important to stress that these terms are relative in that, as the examples given illustrate, we can only index more or less generalised/localised criteria and resources. Here, knowledge of the mathematics curriculum is more generalised as a resource than knowledge of a particular child. Knowledge of the mathematics curriculum may, however, be localised in the sense that it is specific, say, to the National Curriculum for England and Wales, and localised further still in that it might refer only to, say, children at Key Stage 1.

Not only are these resources relatively generalised/localised but so too are the practices within which they are deployed. Knowledge of the mathematics curriculum might, thus, be used to make a comparison between two children in a particular class (localised practice) or to design a school mathematics policy (a more generalised practice). Both are contextualised (they cannot be recognised without a context) but differ in the degree of localisation of the mode of their realisation. Localised resources can also be deployed within both generalised and localised practices. Knowledge of the disposition of a particular child can be used in the selection of appropriate tasks for that

child (localised practice) or to act as a critical case in the development of, say, a whole school scheme of work (generalised practice).

We can represent the above distinctions between localised/generalised criteria and localised/generalised practices in diagrammatic form (Figure 8.1).

**Principles**

| **Mode of realisation** | **Generalised** | **Localised** |
|---|---|---|
| **Generalised** | Generalised criteria<br>Generalised practice | Localised criteria<br>Generalised practice |
| **Localised** | Generalised criteria<br>Localised practice | Localised criteria<br>Localised practice |

*Figure 8.1: Relationship between principles and mode of realisation*

In Figure 8.1 the juxtaposition of levels of generalisation/localisation and criteria/practice gives four quadrants. As one moves from left to right the criteria become increasingly local in that they draw to an increasing extent on the experiential and the private, whereas the on the left of the figure criteria are progressively more dependent on explicitly principled, and thus *potentially* public, areas of knowledge. As one moves from top to bottom the practices within which the criteria are applied become increasingly local. In this model, idealised professional practice would be described by

the quadrants on the left of the diagram, in which generalised criteria are brought to bear on both general and local contexts, but in which there is also the opportunity for the operation of local (experiential) criteria to be brought to bear on both general and local contexts. A stereotypical characterisation of a parent's deployment of their knowledge of their own child in operationalising IMPACT tasks might be described by the lower right-hand quadrant in which localised criteria are brought to bear on a local context.

### 8.2.1 GENERALISED CRITERIA

In describing the selection of tasks, the eight teachers interviewed make use of five relatively generalised criteria. This set of criteria is inferred from the teachers' discussion of the selection of IMPACT tasks. As such this represents an initial step in inferring from discussions with this small sample of teachers, the reservoir of criteria used by teachers in selecting IMPACT tasks. The repertoires of individual teachers can then be discussed in relation to this and to each other. The criteria can be stated as a number of questions that can be asked of any task:

(1) *Is the task accessible to children of a wide range of attainment levels and aptitudes?*

It should be possible for children from across a wide range of levels of attainment to be able to do something worthwhile with the task. At the most basic level this means that the instructions must be clear and unambiguous. At a more sophisticated level this means that the task should offer the potential for both low and high attaining children to be challenged by the task and to gain something (necessarily different) from doing the task. Two children might, for instance, approach a problem solving task with a

different range of mathematical skills and produce different orders of solution.

*(2) Is the task extendible?*

This involves gauging the extent to which it is possible to go beyond the task as described. Extension of the task could involve (i) changing the level of mathematical skills or knowledge required to do the task (e.g.. substituting larger numbers); (ii) changing the limiting conditions that apply to the task (e.g.. extending an investigation from 2D to 3D space); (iii) changes in the resources that can be used (e.g.. complete the task without using a calculator); (iv) changing the level of generalisability expected (e.g.. go from the solution of particular problem to all problems of a particular form). The possible extension to a given task can be made explicit by including suggestions on the sheet or they might remain unstated. If they are made explicit it has to be understood that these extensions may not be appropriate for all children. Thus the reader needs to be able to gauge the extent to which the extensions are appropriate for the child in question. Where the extensions are not made explicit the reader needs to be able to identify legitimate extensions to the task themselves.

*(3) Can the task be integrated into a range of areas of mathematics and/or other areas of the curriculum?*

In selection of tasks it appears to be important to determine the extent to which the task draws together (i) different areas of the mathematics curriculum; (ii) the mathematics curriculum and the school curriculum as a whole; (iii) school tasks and everyday activities. In a number of the examples given by teachers the school mathematics content of the task may in fact be subordinate to the development of generic skills or skills and

knowledge relating to other areas of the curriculum. The reader of the task has to recognise the value of the non-school mathematics content of the task and accept the legitimacy of this.

(4) *Can the task be placed clearly in the sequence marked out by the mathematics curriculum?*

The primary school mathematics curriculum can be described as presenting a sequence of skills, knowledge, concepts and strategies. The appropriateness of a task is, according the account given by the teachers, partly determined by the extent to which it is seen to extend the work that is, at any given time, being carried out within the classroom in relation to this progression. As for criteria 3 the question is 'does it fit?', not this time in terms of related content but in terms of appropriate place in a sequence. To make such a judgement presupposes an understanding of what has come before and what is to come after. In other words there is a necessary temporal orientation; a notion of career and knowledge of the fundamental organising resource for this, the curriculum.

(5) *Is the task specialised with respect to the content of the mathematics curriculum?*

In the selection of tasks teachers recognise that the various components of a task may have potential to develop different skills or knowledges. Thus a task that is ostensibly about the measurement of area may have within it a component that has potential for the development of mental arithmetic skills. What is important here is that it must be possible to identify at least one area of the mathematics curriculum which the task can be seen as addressing.

In each case the resources drawn upon are relatively generalised e.g. the primary mathematics curriculum. Thus, given the somewhat abstract question 'what make a good IMPACT task?' and asked to explain why, the teachers made statements relating to one or more of the above. Ms Chadwick (teacher at Chelmer Grove) states, for example:

> I think I like an IMPACT where the children can be challenged and yet really do understand what they're doing when you're talking to them. Because sometimes we're in class and I'm explaining the IMPACT activity and I can see a sort of puzzled look on a few faces and that worries me because I know by the time they get home they are going to be even more puzzled. So I like the sort of activity where they can understand what they have to do to start with and hopefully will take it further at home and if they don't take it further at home we can do the follow up in class anyway.

Here she stresses the need for the task to be *accessible*, to be initially understandable to all children in the class and for the children to be able to retain sufficient understanding of the requirements of the task to know what to do when they get home. It also has to be *extendible,* that is allowing either the children with their parents or the teacher in school to go beyond the task, to get something more than the face value out of the task. It should be noted that in the passage quoted above, although the teacher is making a relatively generalised statement about what constitutes a good IMPACT task, she legitimises this by reference to her experience in the highly localised setting of her own classroom.

Elsewhere Ms Chadwick draws attention to the need for a 'good' task to *integrate*, to fit with other work that is going on within the class, as in the example given below.

> I like to integrate it with my maths lesson so if I'm doing a topic on shape and we've been talking about rectangles and pentagons and things, then I like the IMPACT to be on that so it's not a sort of this is IMPACT and that is maths, you know, it's all one thing.

The integration need not just be in terms of mathematics. The selection of the task might relate to another area of the curriculum. For instance, Mr Gibbs, in discussing a specific task, states that:

> It was chosen to fit in with Geography work we're doing on seasons and, I've just found it here, that was it. Yeah we're doing work on seasons and going on to weather in Geography and this term we're doing a lot of work on measuring, of various aspects. So that's why it was chosen and it's em, fit in quite nicely.

In this case the teacher is using one of the generalised criteria and applying this locally in the selection of a particular task.

The generalised criteria listed above are drawn from across the eight teacher interviews. Not all are mentioned explicitly and spontaneously by all teachers. Table 8.1 shows which teachers spontaneously used which of the criteria in discussion of the selection of IMPACT activities.

| | access | extension | integration | sequence | specialisation |
|---|---|---|---|---|---|
| Chadwick | Y | Y | Y | Y | Y |
| Harper | Y | Y | | Y | |
| Mercer | | Y | Y | Y | Y |
| Harrison | | | | Y | |
| Gibbs | Y | Y | Y | Y | |
| Rose | Y | Y | Y | Y | Y |
| Williams | | Y | Y | Y | |
| Shepherd | Y | | Y | Y | |

*Table 8.1: Generalised criteria*

### 8.2.2 LOCALISED CRITERIA

In the selection of specific IMPACT tasks there are also more localised criteria being used. Here the teacher draws directly on their specific circumstances and experiences with the particular parents and children with whom they are working to make judgements about the suitability of a particular task. Thus the teacher might judge a particular task not to be suitable to use because the parents of the children in her class

have reacted unfavourably to tasks of this kind in the past or conversely select a activity because it has been favourably received in the past. This can be illustrated by the following quote from Ms Rose:

> I have to say we also purposely sent number out first because I think families like to see the number thing, although we explained we were doing measurement in our topic work, but we also felt that was something that everybody knew about as well really.

Here she is making a judgement regarding the suitability of tasks based on her perception that the parents of the children in her class prefer number activities, a position taken by a number of the other teachers and one that is noted in the IMPACT literature. In a number of cases the selection of a task relates even more strongly to previous experience with a particular task or a similar task. For instance Ms Rose states:

> we used this last year for one of our early number activities and I can remember some of them saying, you know, we didn't get enough out of this, there wasn't a lot in it and I think we thought more carefully about it this year so that we could do a similar sort of thing with this numbers one to ten but perhaps we needed to make it a bit more exciting.

Another of the localised criteria used relates to the degree of match between the resources required by the tasks and the resources assumed or known to be available to parents. Mr Gibbs, for instance, will not use IMPACT activities that require the use of a calculator:

> I find with IMPACT one of the well it is a problem, yes, okay obviously what you'll use there is a calculator. But you cannot assume that every child has got a calculator and that is a problem with a lot of these sheets. With, you know, it's all right in a well off area where, you know, everybody has got these things but, this isn't one of these areas, it is a very mixed area, you know, and a lot will have them, em, but a lot won't. [There's no guarantees.] There's no guarantee and that really, well frankly, it rules out on many of the sheets because I won't send a sheet home that says use a calculator because I can't guarantee that they've got a calculator and that I find a bit of a problem.

A similar statement is made by Ms Williams

> I wouldn't send anything with a calculator. Because I don't think many of them have calculators. I wouldn't want to put parents in that position. And I wouldn't let calculators go home from school.

As for the generalised criteria, the localised criteria used by the eight teachers interviewed can be summarised as a set of questions:

(1) Will the parents and children enjoy the task?

(2) Is the task within the capabilities of the parents and the children?

(3) Will the task encourage the parents and children to work together?

(4) Will the parents feel the task is worthwhile?

(5) Will the parents have the resources required to do the task?

These criteria can be seen as being closely related to the general ideology of the IMPACT project in that they stress enjoyment, facilitating joint activity and being appropriate to the skills, knowledge and resources of parents. Operationalising each of these criteria requires localised knowledge of particular parents and children.

The distinction between generalised and localised criteria is not always easy to make, not least because the discussion with the teacher is embedded within a retrospective consideration of specific tasks. It also illustrates the high degree of interaction between statements that can be read as indicating the criteria in operation in the selection of tasks and the evaluation of the outcomes of the tasks. For the purposes of this study the precise operation of the criteria in making selections and/or evaluations is not of central importance. Of greater importance are the orientations and resources that enable selections to be made; these are made visible through the identification of the criteria. Access to these become important in the differential positioning of parents, as will be demonstrated later.

## 8.3 Realisation of tasks

For each of the tasks discussed, the teachers are asked how they would, ideally, have liked the parents to have done the task with their children. The accounts given by

teachers are highly consistent across the sample and clearly resonate with the ideal marked out in the IMPACT literature (see Chapter 2) and the IMPACT booklets (see Chapter 5). The accounts focus on what the child does, what the parent does and the features of the setting in which the task takes place. The key features of the teachers accounts are:

(1) The child: explains, does the task, talks.

(2) The parent: is attentive, encourages, discusses the process and content of the task, positively reinforces what the child has done and extends the task. Checks and guides but doesn't do the task for the child. Doesn't assert their own mathematical procedures.

(3) Setting: space and time set aside, resources provided. No time pressures.

The role for the child envisaged is as the carrier of the message of how the task should be done. This is not the same as asserting that they should actually be able to do the task by themselves or that they should have the requisite skills and knowledge to successfully complete the task. The emphasis here is on being able to instruct the parent in what the task is about and how it should be done. It is recognised by some teachers that without this parents may have some difficulty in knowing what to do when an IMPACT task is brought home and that, in order to fulfil the teacher's expectation of the parent, a degree of 'teacherly' knowledge might be required. As this cannot be presumed, the part played by the child is important. Ms Chadwick says, for instance:

> Ideally to, you know, when the child said 'I've got my IMPACT this week', if a parent would sort of sit down and say, 'oh this looks interesting'. You know, 'what have we got to do here' and hope the child will know enough to be able to do that. I realise this isn't easy for a lot of parents, you know. You're expecting parents to have a lot of sort of mathematical or teacherly knowledge which may not come naturally to them. They remember their own school, you know, homework done on their own.

All the teachers stress the importance of the child being the active agent in the completion of the task, but state that the child should not carry out the task by

themselves as they would in conventional homework. Often what the parent should do is defined in relation to this i.e. on the one hand they should not expect the child to complete the task on their own but on the other hand they should not do the task for the child nor should they impose their own procedures for doing the task. Whilst the parent is expected to organise space and time for engagement in the task, is expected to motivate, question, prompt and work alongside the child, ultimately the end product of the task should be the child's. As the earlier discussion of IMPACT meetings illustrated, a very poor view is taken by teachers if the product from the task is seen to be the outcome of the involvement of an over-enthusiastic parent who has taken over the task, or if a parent is overly concerned with the product of the task and has intervened to the extent of prescribing the ultimate outcome without due attention to the child's engagement in the process of doing the task. The part played by the child in the conduct of the task is thus fairly straightforward, whilst the part to be played by the parent is very complex. The teachers' accounts of what they consider parents should do bears further consideration.

The ideal role envisaged for the parent in doing IMPACT tasks can be described as that of 'pro-active collaborator'. The features of this can be described by drawing out five key components and elaborating and illustrating these with quotes from the teacher interviews.

*(1) The parent should mark out space and time for the task and provide resources.*

The need for the parent to mark out a particular place and time for the task to be done is signified in the teachers accounts by reference to 'sitting down with the child'. For instance Mr Gibbs, in elaborating how he would have approached a particular task had

he been a parent[1] states that 'Well I suppose if I had a kid and that came home we'd sit down and ...'. Ms Chadwick likewise states that 'I would like a parent to sit down and say ...' and Ms Harrison, using her own approach to a particular task to exemplify how parents should approach a particular task says 'I'd got them all sitting round in a circle ...'. Ms Harrison also observes that having parents carry out tasks in the home opens up possibilities that are restricted organisationally within the school due, presumably, to limitations on space, time (teacher and pupil) and resources. For example 'I would have liked them to have actually played the game. Something that we can't do in school is play in small groups'. She goes on to demonstrate the importance of resources, in this case coins with which to play a game.

> I would have liked them to carried out the game as it was written on there, with them sitting down with their child, with a pile of pennies, a pile of 2p's, pile of 5p's, piles of 10p's and 20p's, few of all of the range of coins. With a dice and a couple of piles, roll the dice, gather up the coins and at the end of the game, you know, who's got the most amount.

Resources may lie outside the school. Mr Gibbs states:

> if they don't then have ... any books in the house that can help us to find out ... if I really had the time and opportunities, I'd go to the library and find out.

The question of resources is seen as problematic by some teachers, as we have seen in the discussion of calculators in the previous section. Ms Williams says that:

> first of all I avoided anything that had a dice or cards ... I'm trying to get in all these 27 Impacts and if I do anything like, anything that needs apparatus, I'm just making it hard for myself, they won't do it. So I only sent things that didn't require anything ... Because a lot of these games were much more suitable for these poorer children and there hasn't been a problem. Some of them said they had no cards or they had no dice. And I said well once you go and ask your parents, I'm sure they'll find you one and if not, ask you Nan, ask next door. You know, keep asking till you find one, someone will lend you one. And there hasn't been a problem.

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[1] Teachers addressed the question 'How do you think the children and parents should have carried out the activity to get the most benefit from it?' in either the first person singular ('I would do this ...'), the third person ('they should do this ...') or by reference to actual responses to the task ('what happened in this case was ...'). In some cases the teacher gives an account of how they themselves have approached a particular task as a way of exemplifying what the parents should have done.

Organising space, time and resources, whilst necessary, is not sufficient. Ms Mason wants parents 'to actually do it with the child, go through the physical process with the child rather than just supply them with the materials'.

*(2) The parent should participate in the activity.*

All the teachers mention the importance of the parent taking part in doing the task. In addition to the passages quoted above that index the parent sitting down with the child and doing the task as important (not just sitting the child down) Mr Harper, for example, says that parents should 'discuss it (the activity) while it was going on' and Ms Williams says that someone should be 'sitting with them (the child) and talking about how they design it' when discussing one of her tasks. Participation does not mean that the parent should do the activity for the child. Ms Chadwick states that 'IMPACT is a sort of togetherness rather than an 'I know lots more than you do'. I often get comments like from parents, it's a pity she doesn't seem to know her tables.' Here she indicates that some forms of participation, in this case that which focuses attention on the level of attainment of the child, are viewed negatively.

Ms Rose speaks favourably of a task in which:

> Obviously there has been the two people working together there haven't there. I mean and another one's, I mean here, and others you can sort of see there's been writing from the parents, so it's obviously been very co-operative activity there really.

She also gives as a negative example:

> One little boy whose family just wrote in the things, that wasn't helpful for our follow-up work because, of course, he couldn't write them and he couldn't possibly, I mean he could remember that they'd got one television in the house or they'd got two dogs, but when it got up here, he couldn't read them and he couldn't remember all that. So I think it does need to be you know a sharing of skills really, er, and he was, he got really fed up when we were then, you know, doing the feedback in the lesson. So, we're looking for shared work on that, yes.

In some cases, tasks are specifically designed or chosen to force some form of parental participation. Ms Shepherd compares two tasks in these terms, observing that:

> I think those sorts of things children quite often would say 'oh I know how to do that , I've been told at school, I can do it on my own'. Whereas they can't do that on their own unless they ask the parent.

*(3) The parent should motivate and encourage the child (motivationally oriented interaction).*

It is not only parental participation that is important but also the form of interaction that takes place between the parent and the child. One form of parent-child interaction sanctioned by some of the teacher is that which attempts to encourage or motivate the child. Mrs Chadwick says that at the beginning of the task the parent might say 'oh this looks interesting' and at the end 'when the child finishes this sheet, which they all should have done, and said 'that was really easy, wasn't it?' And the child says 'yeah that was dead easy''. Mr Gibbs speaks of 'encouraging' the child and helping them to get into the task. Ms Harrison discusses the need to make sure that the activity is put in a 'fun situation' and that is 'non-threatening' to the child.

*(4) The parent should talk about the task, ask questions, guide the child and promote reflection (cognitively oriented interaction).*

In the teachers' accounts of the ideal realisation of the tasks in the home, interaction that is oriented towards fostering the child's learning, particularly the use of questioning by parents, has a much higher profile than motivational interaction. At it's most basic level this entails parents talking to the child about the task while they are doing it. Ms Williams states:

> I know if someone's sitting with them and talking about how they design it um and then, I suppose it's a choice of the next number to do. You know, how could you design something interesting and I think a load of talk could come out of that.

Here the parent is placed in the position of prompting the child to reflect on the activity. The parent's role might be seen as more active. Mr Harper suggests that they should 'point out things that the child's not seen and ask them what they're doing' And identifies 'questioning' as important. Mr Gibbs puts the parent in the position of providing ways into the activity by asking questions and suggesting strategies. In discussing one activity he suggests that parents might:

> help the child by saying 'right, what are the times of the year you'll enjoy? Christmas, firework night, etcetera. Where do those go?'

And, in discussing another of his activities, says they might:

> Start off with a few trial and error ones I think and then get on to the fact that, em, well can we work backwards which is one of the things that this leads on to. Em, just investigating it that way.

These questions could focus on particular features of the task such as 'What can we change that into? Is there going to be anything left over?' (Ms Harrison) and might be linked to specific mathematical features of the task ''How do we get from here to here?' And to talk about inverse operations, I mean, on a very simple scale with this one' (Ms Chadwick).

Helping parents to engage in this form of interaction with the children is an explicit objective in some of the schools. In Sugden Road a video was made by the teachers to model for parents how they might work with their child.

> We made a video in school of, I think it was me that was doing the activity with a couple of children in school. I think it was um what was it, it was pattern it, patterns, a spoon and a fork, a spoon and a fork. Which is one of the tasks. And we filmed that and put it on video. And when we first introduced IMPACT, um, which I must admit not a lot of parents actually attended, we showed them the film. And we showed it the children actually since, trying to show you know, trying to show sort of the ways you could support, how you could talk to them That was the sort of thing, just to give them an idea. What you did with it. What you actually did with it. (Mrs Shepherd).

(5) *The parent should extend the task.*

The teachers are keen to see parents extend what they do with the child beyond the task as stated on the IMPACT sheet. The extension might simply be to continue an arithmetic task by using bigger numbers. Ms Chadwick suggests, for instance, that parents should consider 'Well let's think of some harder numbers and see if we can do them with harder numbers. And then to work with the child'. Ms Harrison gives an example of this kind of extension of a task.

> Yes and they then extended it you see. And they went up to sharing other amounts of coins ... And this particular child again is one of the ones in the top maths group, quite, a very able child. Started just with the 10ps look, just using 10ps, then they obviously went up to 20p. That's 20p that one look, they've shared 20p between all the members of the family. And then they've shared 30p. Gone up in stages. Gone up to 40p.

Ms Mercer expresses her disappointment, when discussing a particular task, that parents had not seen the full potential of the task and extended it as she would have wished.

> I think I would have liked to have seen them do some other things. Um, measuring and doing it to scale but in fact, none of them did. They just did their sheet and that's it. With everything actually. It's been the same, they haven't done anything else.

The extension might not be explicitly mathematical. It could, as Mr Gibbs suggests, involve extending the task to contexts outside the home. One of his tasks involved placing family events, such as the birthdays and holidays, on a circle divided into twelve segments to represent months. His suggested extension was to move beyond domestic events and use other sources (books within the home or from the local library) to identify other events that could be represented on this 'time wheel'.

From the accounts of how the teachers would have liked parents to have done the IMPACT tasks they have sent home it has been possible to construct a description of the teachers' ideal 'mode of engagement' with IMPACT tasks, that of the 'pro-active collaborator'. This mode of engagement is complex. In an attempt to capture these expectations of the 'ideal parent' with respect to the conduct of IMPACT tasks, the five elements discussed briefly above have been identified from the teachers' accounts.

Not all the elements are spontaneously mentioned by all the teachers in the interview. Table 8.2 gives a summary of which elements were mentioned by which teachers.

| | organise | participate | motivate | question | extend |
|---|---|---|---|---|---|
| Chadwick | Y | Y | Y | Y | Y |
| Harper | | Y | Y | Y | Y |
| Mercer | Y | Y | | | Y |
| Harrison | Y | Y | Y | Y | Y |
| Gibbs | Y | Y | Y | Y | Y |
| Rose | | Y | | | |
| Williams | Y | Y | | Y | Y |
| Shepherd | Y | Y | | Y | |

*Table 8.2: Ideal realisation of tasks*

The profile is fairly consistent in that all stress participation and give, to varying degrees, some substance to what participation on the part of the parent might entail. The exception to this is Ms Rose. In her discussion of what she would have liked parents to do with the activities sent home, she stressed co-operation between parent and child and illustrated this with a number of both positive and negative examples from work carried out by parents and children in her class. Whilst she elaborated how she can tell from the outcomes of a task whether collaboration took place or not she did not give an account of what might constitute collaboration in terms of the parent's actions. Throughout the interview her responses were highly localised in that she referred the majority of the questions back to the particular group of children with whom she was working. This is particularly marked in the discussion of the IMPACT task 'How much is your hand worth' in which she referred the activity directly to the children in her class and was reluctant to discuss more generally what children might learn from doing the task. In particular she stressed that children should never be given a task to take home without

preparation in school and that 'the whole thing is the message that the children take home with the sheet and the background to that'. One factor in this might be her apparent strong self-identity as an early years teacher and that, as a Reception class teacher: (i) in order for the children to retain some control over the activity there was greater need for them to be able to explain what was required without reference to the sheet as few of the children would be able to read it; (ii) as she was inducting her children into both the practices of schooling and the practices of IMPACT at the very beginning of their school careers, she had less explicitly mathematical aims for her IMPACT work. It is only in the interview with Ms Rose that the attempt to move discussion from highly contextualised and local practices to more general considerations did not bring about a change in focus.

In the sections of the interview being discussed here teachers are elaborating their ideal realisation of the IMPACT tasks within the home. It is important to distinguish this from *expectations* of parents. It is clear that not all parents are expected to operationalise the tasks in the ways discussed here. The descriptions given here enable a comparison to be made between the ideal and the accounts of their own realisations of the tasks given by the parents (see Chapter 9). Differential expectations of parents and children are discussed in Section 8.5.2 below.

Although in the interview teachers are asked about how they would have liked to have seen particular tasks carried out at home, the descriptions they give are highly general with very few references to the specific features of particular tasks. What is being asked of the parents and child thus appears to be a general orientation towards mathematical tasks. In order to achieve this for any given task, however, some knowledge of the purpose of the task, of school mathematics and of officially sanctioned forms of pedagogy is required. The form of engagement sanctioned in the accounts closes down the space available for mathematical discourse—little indication is given of the manner in which a given task contributes towards the development of a

particular mathematical skill or concept. This in turn produces problems for those parents who bring mathematical resources to the reading and operationalisation of the tasks in that the manner in which school mathematics relates to the regulation of activity is difficult to discern. The operation of the teacher's knowledge of school mathematics operates at the level of selecting the task, reading the performances of the children and formulating interventions. In their accounts of how they think parents should interact with children, listening, asking questions, supporting and so on are key elements. What is of interest here is the detachment of these from the basis on which one might decide, for instance, when to listen and when to intervene, what questions to ask and what aspects of what the child does to which to positively respond. The question remains: how do teachers and parents know when to do what?

## 8.4 Reading tasks: 'How much is your hand worth?'

This task (see Figure 5.9) is taken from one of the early IMPACT activity packs. It can be considered a 'classic' IMPACT activity in that it has many of the attributes of a good activity identified by Merttens and is discussed by Merttens and Vass. Further, Merttens and Mayers give an account of how a parent carried out this task with their child as a way of exemplifying what, in their terms, it is possible to achieve with IMPACT.

The task was presented to all the teachers and parents interviewed. The teachers were asked what they thought the purpose of the task was and how they thought the parents would approach it (Teacher interview Q. 7.1). The parents were asked how they would do the activity and what they thought it was designed to teach (Parent interview Q. 1.8). The purpose of this was to compare the teachers' readings of the task with the parents' readings. This section will deal only with the teachers' readings. A comparison between the teachers' readings of the task and the parents' readings of the task in made in Chapter 10.

### 8.4.1 MATHEMATICAL CONTENT

The teachers each gave an account of the mathematical potential of the task, that is they mention specific areas of school mathematics within which children can either use or extend their skills and understandings in doing the task. The following mathematical content areas were mentioned: money, counting, calculation, measurement and shape. These general topics can be sub-divided into more specific sub-topics that are relevant to the conduct of the task. For instance, 'comparison of areas' is a more specific sub-topic of 'measurement' and 'addition', 'subtraction' and 'multiplication' are sub-topics of 'calculation'. The topics and sub-topics are drawn from the statements made by the teachers and the parents when discussing the task. The topics spontaneously mentioned by each teacher are given in Table 8.3. In addition to references to specific mathematical content areas, some generic skills were also mentioned e.g. the development of motor skills and estimation.

To be recorded as having mentioned, say, 'measurement' the teacher would have to either directly identify measurement as a topic that is addressed by the task or mention one of the sub-topics i.e. they would have to say, when asked what they thought the purpose of the task was, something along the lines of 'this is about measurement' or 'the children will have to compare areas' or 'this gets children to think about the measurement of area'. What is being judged here is the extent to which the teachers can recognise the mathematical potential of the task and the degree of detail with which they can specify this. The number of broad areas identified by interviewees is shown in Table 8.3. If a sub-topic was mentioned in discussion of a particular aspect of the task then an asterix is placed by the general topic within which the sub-topic falls. In this way a total score for each interviewee showing the number of broad areas of school mathematics identified an discussed can be calculated (*general areas* in the table below).

In addition the number of areas in which sub-topics are indexed by the interviewees can

also be totalled (*specialisation* in the table below). This enables numerical comparisons to be made between teachers and parents (and sub-groupings of parents) with respect to the scope and detail of the mathematical areas identified (discussed in detail in Chapter 10).

| | | RC | JH | JG | FR | LM | PH | SW | KS |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Money | 1* | 1 | 1* | 1 | 1* | 1* | 1* | 1* |
| 2 | Counting | 1 | 1 | 1 | | 1 | 1 | | |
| 3 | Calculation | 1* | 1* | | | | 1* | 1* | 1* |
| 4 | Measurement | 1* | 1* | 1* | 1* | 1* | 1* | 1* | 1* |
| 5 | Shape | | 1* | 1* | | | 1* | | |
| | Total (general areas) | 4 | 5 | 4 | 2 | 3 | 5 | 3 | 3 |
| | Total (specialisation) | 3 | 3 | 3 | 1 | 2 | 4 | 3 | 3 |

*Table 8.3: Mathematical content*

The table indicates that all teachers have identified the task as addressing 'money' and 'measurement' and that they have been able to, in most cases, detail what they would specifically expect the task to achieve in terms of the mathematics curriculum. The exception is Ms Rose, discussed in Section 8.3 above. Her account is particularly interesting as, when discussing the selection of IMPACT activities, she mentioned all five of the generalised criteria. When presented with a specific activity to evaluate, however, she related this so strongly to the localised setting of her own classroom that she placed herself in a position from which it was not possible to produce a more general evaluation of the activity. She opens her discussion of the task by saying 'Their hands are little, they're not gonna get many are they?' and goes on to discuss the task in

relation to the physical and mathematical competence of children of the age of those in her class.

### 8.4.2 FORM OF THE ACCOUNT

In discussing the potential of the task in terms of school mathematics all the teachers made some direct references to aspects of their own classroom practice and to the characteristics of the children in their class (and the parents of the children). These statements can be seen as an incidence of the operationalisation of the selection criteria discussed in Section 8.2. In considering the mathematical potential of the task the school curriculum is a key resource. Using this the teachers are able to place the activity within a sequence of topics. For instance, Ms Chadwick says that 'I suppose you would do that really with em, if you were doing money. It would be a nice one for area as well, wouldn't it'. This kind of statement, relating the activity to a particular topic within the curriculum is made by each of the teachers (see Section 8.2.1 above). In a number of cases the statements are more localised in that the teacher relates the activity directly to their current circumstances. Mr Harper, for instance, states that 'If you gave it them soon, they'd like it because we're actually doing money. And so it fits in perfectly with what we're gonna do'. Similarly, but resulting this time in a negative evaluation of the task, Ms Rose says:

> Well, I wouldn't be giving it to my children … Well, is it to do with area or is it to do with money really? I mean it's a bit of both really … we wouldn't give it to our age group… I mean there's lots of things in there really. No I'd start money from a different point of view, I mean, in a way really, I mean you have to have it following on don't you.

Ms Harrison draws a parallel with some work she has recently done on tessellation.

> And also we've just been doing a bit about shape and space and you've also got this business try not to leave gaps between the coins and we've just been talking about how economical it is and how people fill chocolate boxes, if they use certain shapes, they get less chocolates in for your money … so in fact it's got a bit of that in it as well hasn't it?

These are examples of the movement between the generalised and the localised. The teachers have a shared generalised resource, the mathematics curriculum, which can be used in making judgements at both the level of describing and evaluating a task in general terms and at the level of interpretation of classroom events. Similarly experience, a localised resource, can be used in making judgements at both levels, the former in terms of exemplification of a particular characteristic of a task or legitimation of a statement about a task, the latter in terms of specific judgements about the appropriateness of the task, say, for a particular child. The teachers' accounts are thus characterised by the deployment of both localised and generalised resources in producing a reading of the task and movement between judgements at the generalised level of the task (i.e. producing an account of the pedagogic potential of the task) and the localised level of, say, gauging the appropriateness of the task for a particular child or group of children.

In all cases the task is read as something other than it would appear to be at face value. The task requires children to place coins on a drawn outline of their hand. The outcome of the task, as read by the teachers (and if carried out in a certain way), is other than becoming more proficient at placing coins on hands. In this section an attempt has been made to identify, on the basis of the accounts given in the interviews, how this pedagogic potential is recognised and described by the teachers. This provides the basis for the analysis of the parents' accounts in Chapter 10.

## 8.5 Evaluation

In the interviews teachers were asked to say whether or not they thought each of the tasks sent home was successful or not (Q. 2.6). Their responses to this, and to associated questions in Section 2 of the interview (particularly those that address parental responses to tasks, evaluation of the range of outcomes from tasks and

comparisons between tasks) allow the basis for evaluation of tasks and of parents to be explored. Looking across the transcripts as a whole it is possible to address the following questions: (i) what kind of information are evaluations based on? (ii) what form do teachers' evaluations take? By answering these questions it then becomes possible to begin to describe the form of the relay of information from the home to the school, what is relayed and the effects, from the perspective of the teacher, of what is relayed. It is then possible subsequently to look at the manner in which parents are positioned in relation to this and the extent to which the parents interviewed have access to the criteria for evaluation used by teachers.

### 8.5.1 SOURCES OF INFORMATION

The discussions with the teachers look back at tasks that have been carried out by pupils at home with their parents. The teachers are being asked to look back on each task and state whether or not they consider it to have been successful or unsuccessful. These evaluations are thus made on the basis of knowledge of the outcomes of the task, the comments made by parents and so on. The sources of information on which the teachers interviewed made their evaluations of the tasks, the parents and the children are as follows:

(1) Parental responses to particular IMPACT tasks.

- Written—IMPACT diaries, notes from parents.
- Verbal—casual conversations before or after school, open evenings, individual meetings.

(2) Children's responses to particular IMPACT tasks.

- Written—IMPACT diaries.
- Verbal—interaction in the classroom.

(3) Products from IMPACT tasks.

(4) Children's performance in the classroom.

Both parents and children are thus acting as a source of information which can be recognised by the teacher as being relevant and on which judgements can be made. There are varying degrees of control over what is produced in that parents have, for instance, a high degree of discretion over what they write in the IMPACT diary or what they say at a parents' meeting. What they may not be aware of, as discussed earlier, is (i) precisely what is recognised as relevant by the teacher (ii) how this is interpreted by the teacher. Thus, for some parents, a high degree of control over what they produce will not translate into a high degree of control of the message in that they do not have access to how what is relayed from home to school is interpreted by teachers. The same, of course, holds for those sources of information over which the parent has less control, such as the products of the IMPACT task. Here there are still opportunities for selection (e.g. editing the material produced by the child before it is taken back to school) and thus management of the messages relayed to the school by those parents that have access to the teacher's criteria for evaluation is possible.

### 8.5.2 Evaluation of outcomes

Many of the statements made by the teachers refer directly to the evaluation of the outcomes of IMPACT tasks. From the interviews it is possible to identify some of the criteria used by teachers to decide whether or not the outcomes of a task sent home have been positive or negative. There are four major areas which are addressed by teachers' evaluative comments: task products, task completion, child engagement with the task, parent engagement with the task. Each of these areas can be broken down into more specific items and organised in network form as evaluation systems. I have not included

these in the thesis as this part of the research is not central to the argument being developed here and space is limited. Instead, I have given brief descriptions below.

(i) *Task products.* Evaluation of a task in terms of the end product (i.e. the things that the children bring back into school having done the task at home) clearly relates to the criteria for selection of tasks discussed above. The task products are judged on the basis of the whether they provide good follow-up possibilities, good display potential, are judged as being of good quality and/or are considered to demonstrate high levels of creativity. The amount of work produced and the diversity of work produced are also factors (the greater the amount and the greater the diversity, the better).

(ii) *Task completion.* As we have seen from the discussion of IMPACT literature, high completion or participation rates are commonly cited as indicators of the success of IMPACT. This is mirrored in the teachers' evaluations of tasks. If some children start but do not complete the task or if only a small proportion of the children in the class participate, then the task is viewed as unsuccessful. The degree of difficulty in completing the task was mentioned, but of greater importance, with respect to whether the task was judged as good or bad, was whether or not the children achieved a correct (or acceptable) outcome.

(iii) *Children's engagement with the task.* Tasks judged to be good include those where children can exercise a high degree of autonomy (i.e. do the task themselves) but only if there is evidence that the parent has been involved in some way. Tasks that are carried out by the child alone, without any form of adult intervention are seen as poor tasks. Similarly, tasks that produce high

levels of responsibility for the products amongst the children, and which foster creativity, enjoyment and enthusiasm are also evaluated positively.

(iv) *Parents' engagement with the task.* The manner in which the parents are seen to be engaged in the task and the form of their response to the task are also factors that the teachers took into consideration in their evaluations of the tasks. If the parents follow the instructions, are involved, extend the task, see the point of the task or have enthusiasm for the task, this contributes to the positive evaluation of the task by the teachers. If parents are seen as being responsible for the outcomes of the task, this is seen as reflecting negatively on the task. If parents make a positive comment on the task, this reflects positively on the task. If they make a negative or do not make a comment, this contributes to a negative evaluation of the task. If the parents see the task as either hard or easy whilst achieving the pedagogic objectives, this counts as a positive factor in the teachers' evaluation of the task. If, however, the task is not seen as achieving the projected pedagogic objective, this is seen as a negative factor.

### 8.5.3 EVALUATION OF PARENTS

There are numerous points within each interview where teachers give some indication of the manner in which they evaluate parents. I have classified these statements into those that concern parents' *orientation to schooling* and those which concern their *mode of engagement* with the IMPACT tasks. The former is described in terms of their perceived level of *motivation*, level of *support* provided and level of *communication* with the school. A high rating in each of these areas contributes to a positive evaluation of the parent by the teacher. Parents are also judged on the basis of their *expectations* of their children. Both *high* and *low* parental expectations of their children can provide the basis

for both positive or negative evaluations of a parent by a teacher. What matters here is whether the teacher sees the parent's level of expectation as *appropriate* or *inappropriate*. A close match between the teacher's and the parent's level of expectation of the child will thus contribute to a positive evaluation of the parent by the teacher.

From the teacher and parent interviews, I have developed six categories to describe parental mode of engagement in the realisation of IMPACT tasks. These are divided into four modes of *pedagogic* engagement and two modes of *non-pedagogic* engagement. Pedagogic modes of engagement are oriented towards the production of a pedagogic context and the establishment of a purposeful pedagogic relation between parent and child. By contrast non-pedagogic modes of engagement are concerned solely with surveillance and the regulation of the context produced in the realisation of the IMPACT task within the home. *Collaborator* mode can be seen as providing the social and interactional basis for the ideal realisation of the task described by teachers in Section 8.4 above. Here the parent works with the child but does not take control of the activity. Parent and child work together in a form of 'joint activity'. Ideally the products of the task are responsibility of the child; the expertise of the parent is available as a resource in the accomplishment of the task if necessary. Mr Harper, in talking about what makes a particular activity work for some parents but not for others states that:

> I think it's probably to do with the way that the child and the adult actually relate when doing them. If the adult's actually got the notion that the child's meant to believe in the activity and they're meant to be learning together, then they get a lot more out of it

In all the teacher interviews, evidence of adoption of the collaborator mode of engagement with the task contributed towards the positive evaluation of a parent. Even in those circumstances where the parent takes a greater part in the activity than is seen as ideal, the joint nature of the activity is prioritised in the evaluation of the parent. For instance, Ms Mercer says:

> I think, well to me the whole idea is that they do it with their parents. It's supposed to be a joint activity. Maybe I've got it wrong but. Um, and therefore even if it ends up at home with the parents doing it, it's not incorrect. It's not inappropriate if the parent does more of it than the child um, as long as they're doing it together. I think that's the thing isn't it, to get them working together.

All other forms of pedagogic engagement were viewed, to varying degrees, in a negative light. The extent to which these other forms of engagement are seen as negative is contingent upon both the nature of the task set (e.g. some tasks are seen as requiring greater parental input than others) and the circumstances of the family (e.g. limitations of time, material resources or knowledge/expertise are seen as affecting the manner in which the parent is able to engage with the task).

In *instructor* mode, the parent adopts an explicit form of pedagogy, that is they make some attempt to teach the child or to instruct them in the completion of the task. One of the perceived dangers of parents adopting the instructor mode is that they will teach the child methods that are in tension with those of the school or adopt forms of pedagogy that are seen as inappropriate. Ms Rose, in explaining why she attempts to resist parents' requests for more number based activities, observes:

> The other problem that we hit there is that people have actually learnt addition, like if you go to hundreds tens and units and things, they actually have slightly different methods, so we are trying to give things that the children can go home and explain what they want to do and perhaps together they can work out a solution to it.

There is also a perceived danger in teaching children particular skills at what is seen as an inappropriate time. For instance, Ms Harrison describes a situation where a father has, inappropriately in her view, taught a child how to do division calculations.

> But, but obviously that father decided that because Mrs Harrison had mentioned the word share, he'd better teach him how to do short division and long division sums. And the kid's seven. You see, so that was a big imposition really, I felt. I thought, I said oh Tim, I said, you don't have to do such difficult sums already.

She also draws attention to the difficulties parents adopting this mode of engagement might have in assessing their children and diagnosing problems.

> If you ask parents to do a bit of homework around money, it's a not threatening situation, you're not asking them to be put into a teaching situation because money is key to everything. But you see it wasn't the case. Because they hadn't realised that children were going to have a problem making 10p, using 1p's, 2p's or 5 p's or a mixture of any one of those. And then, changing those 5p's, even the 5p's, then the 5p's going to 10p's, the 10p's going to, becoming 20p's and so on. They just hadn't perceived that that was going to be a problem for their children. At all. And it's not until they actually sit down and they realise and they say, oh, Mrs Harrison's right. They can't do it. They don't understand it.

In *demonstrator* mode, parents show, or model, how things are done or take over the activity and do it themselves. Ms Shepherd states that 'parents often do it for them' and that, with respect to one particular construction task, 'we actually had some weird concoctions but people, well I think a lot of parents had made them'. All the teachers mentioned, in a negative light, incidences where parents had done a task for a child.

By contrast, in *monitor* mode parents are treating IMPACT like conventional homework. Children are expected to carry out the tasks on their own, with parents doing no more than ensuring that the task is done and that, from the parent's perspective, it has been completed in an acceptable manner. Here the parent is ensuring that time, space and resources are marked out for the child to carry out the task. In checking the product of the task they are regulating what passes between home and school. Ms Harrison described this approach in the following manner:

> you've got to sit down, and it's homework and that's what I'm saying, exactly the same as I'm saying about that comment, because it pertains to the National Curriculum, it's valid. The children have obviously got to do it. Because it says so. And they've got to get their box ticked off. And another hoop that's got to be gone through. In this race to achieve the best all round achievement that's possible for their child. Is very much, it's like these wretched reading books. With Level One and Level Two on. And standing at the school gate you know, my child can read Level Six. So what, you know. ((laughs))

All teachers interviewed cited examples of parents engaging with IMPACT tasks in both demonstrator and monitor mode. In all cases these ways of operating were considered as being against the spirit of IMPACT and not allowing child and parent to reap the full benefit.

The *active* form of the *non-pedagogic* modes of engagement entails some regulation of space, time and resources, but without any attempt to engage with the task pedagogically. The parent might encourage or coerce the child to do the activity and may employ a range of strategies to initiate and maintain their engagement with the task. The parent's involvement here is at the level of the management of the task. In the *passive* form of engagement, the parent is not actively and purposively involved in the regulation of the activity. In neither of these cases is the parent involved in purposeful transmission of skills, dispositions or knowledge relating to school mathematics nor the evaluation/assessment of the child, the task, its realisation or its outcomes.

The modes of engagement of the Midbury parents interviewed will be discussed in Chapter 10.

## 8.6 Conclusion

The analysis presented in this chapter set out to explore the manner in which teachers select tasks, how they would like to see these tasks realised within the home, how they read and interpret tasks and how they evaluate children, parents and the outcomes of mathematical tasks within the context of the IMPACT project. This provides the basis for the consideration of the positioning of parent with respect to the school and school mathematics and the development of an understanding of how the engagement of parents in IMPACT tasks fit with forms of practice sanctioned by the school and how what is relayed between home and school in the process of IMPACT is evaluated by teachers. In this way, it builds on the earlier studies and lays the foundations for the analysis of the parent interviews to follow.

The selection of tasks is described in terms of both generalised and localised criteria. This combination problematises the access of parents to the discourse of teachers. Selection, and evaluation, of tasks entails not just the acquisition of the generalised

principles of school mathematics and pedagogy, but also access to localised experiences. Thus, to understand why a particular task is judged to be appropriate, it is not enough to have just an understanding of the school mathematics curriculum and of a set of pedagogic principles; it also requires an experiential base relating to children and, in the case of tasks for the home, parents. The play of both generalised and localised criteria allows primary teachers to maintain their professional position in the face of challenges from parents who might have a better grasp of, say, academic mathematics. Teachers are able to move between the local and the generalised in making and legitimising decisions.

Discussion of the ideal realisation of tasks generates five elements. The stress placed on participating in the task, but not doing it for the child, closely matches the ideal projected in the IMPACT literature. The teachers, however, are more explicit and detailed in their descriptions. They also mention the organisation of the context for the task, motivation of the child, questioning and extension of the task. These appear to closely match their own pedagogic ideals and thus constitute the basis for the extension of the school into the home. Clearly the teachers do not expect all the parents to operationalise the tasks in this way. This raises the question, however, as to which parents do most closely resemble this ideal in the way in which they work with their children, what discursive resources are required to work in this way and how these discursive resources are acquired.

The teachers are clearly in a privileged position with regard to the reading and interpretation of tasks. In their reading of 'How much is my hand worth?', most of the teachers are able to identify key broad areas of mathematical content and narrower areas within this. Clearly the school mathematics curriculum is a key resource in doing this. The teachers' analyses of the task are compared to those of parents in the following chapter. Comparisons are also made between the forms of parental engagement described by teachers and the accounts given by parents, again with a view to

establishing who produces accounts that match most closely the forms of engagement that are most positively evaluated by the teachers.

The analysis of teacher accounts also gives some indication of the range of sources of information on which they draw in evaluating children and parents and the manner in which these are used. This gives us some indication of how the home enters the school.

# Chapter 9 Midbury parents I—social class and pedagogic biography

## 9.1 Introduction

The analysis of the teacher interviews in the previous chapter clarifies (i) the criteria the teachers use in the selection of tasks and the evaluation of outcomes, (ii) the teachers' ideal realisations of the tasks and their expectations of parents, (iii) the manner in which the teachers read school mathematics tasks, (iv) how the teachers differentiate between parents and children in social terms and (v) how the teachers position themselves, children and parents in relation to IMPACT. This provides a backdrop for the analysis of the parents' interviews. We are now in a position to look at the extent to which there are differences between parents in, for instance, the degree of access they have to the principles of evaluation used by the teachers or, say, in how different parents match, in their accounts of their practice, the teachers' ideal realisation of the IMPACT tasks.

The analysis of the accounts of the teachers provides the basis for defining a semantic reservoir, a mapping of 'what can be said', to which the repertoires of individual teachers can be related. The sample of teachers is very small and the principles for selection of the sample are related specifically to the determination of the characteristics of the parent sample[2]. There are thus limits to both the degree to which it is possible to map out in great detail 'what can be said' on the basis of 'what is said' and extent to which it is possible to make systematic comparisons between the

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[2] The selection of schools was, as has been described in Chapter 7, motivated by the need to ensure that the parent sample was socially heterogeneous. The teachers interviewed within each school were selected on the basis of criteria relating to (i) age of children taught, (ii) degree of active involvement with IMPACT (iii) responsibility for mathematics within the school (see Section 7.5.3 for the full list of criteria). There is thus no attempt here to establish the representativeness of the sample or the typicality of the individual teachers or the selection of particular critical cases with respect to the whole teacher population. The criteria give rise, rather, to a relatively homogenous group of teachers who can be considered to be 'good practitioners' in the operationalisation of IMPACT

repertoires of the teachers in the sample. Thus, in the previous chapter no attempt has been made systematically compare teachers in this way, though clearly, with a larger sample, such an exploration of internal differentiation is possible. What is important for the current study is that a comparison can be made between the accounts of the teachers and those of the parents. The parent sample is both larger and the result of more detailed principles of selection, the intention here being to enable a comparison to be made between interviewees. It thus becomes possible to construct simple analytic networks and to use these to highlight differences between sub-groups within the parent sample. The particular interest of this study is in social class and the analyses reported earlier have confirmed that this is an important factor in the analysis of relations between home and school. The first step in the analysis of the parent interviews, reported in this chapter, is thus to identify distinct social class groups within the parent sample and to explore intra-class differences.

## 9.2 Classification of households by social class

### 9.2.1 Process

As described in Chapter 7, the prime motivation behind the sampling procedure adopted was to obtain a sample of parents which was heterogeneous in terms of social class. For this reason two inner city schools and two suburban schools were selected in order to obtain as close to an equal number of middle class and working class households in the sample as possible. In the interviews the following information was collected:

(i) occupation of interviewee and occupation of spouse (if appropriate);

(ii) educational background and qualifications;

(iii) form of housing.

In some cases the following additional information was obtained from interviewees[3]:

(iv) their occupational history;

(v) the occupations of parents and relatives.

There is long-standing debate about the placement of individuals or households in social class categories[4]. For the purposes of this study, an initial employment-based nominal classification is made. As Crompton (1993) has demonstrated[5], the various types of schemes commonly used for the allocation of individuals or households to particular social class groupings are based on broadly similar occupational placements. Professional and managerial occupations are placed at one end of the scale and unskilled manual occupations at the other, even though the purpose for which the various schemes are devised, and the theoretical bases on which they are formed, often differ greatly. She argues that 'for many practical purposes ... research carried out using different schemes will be broadly comparable, and in many instances, the use of a 'good enough' occupational classification will suffice' (p. 123). Drudy (1991) has made similar observations regarding the comparability, for the purposes of empirical enquiry, of classification schemes developed from very different theoretical premises.

For the purposes of allocating the households of the interviewees in this study to social class groups, a distinction being made between professional and managerial occupations on one hand and clerical, skilled manual and unskilled manual occupations on the other. The former are considered to be middle class, the latter working class. In terms of the Registrar General's Social Class Classification of the British Census

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[3] In some cases this information was volunteered by the interviewee. In other cases, notably when there was some ambiguity about the placement of a family, additional information was requested.

[4] See Crompton (1993) for a detailed discussion of the issues surrounding classification on the basis of social class.

[5] Crompton (1993) draws on the comparison made by Marshall et al (1988) of voting intentions by social class using the same data classified using three different schemes: the Registrar General's, Goldthorpe's and Wright's. She argues that, whilst the distributions are not identical, 'the general direction of employment-class voting intentions is the same in every case (ibid., pp. 121-3).

Classification of Occupations used for the 1971 census[6] (Office of Population Censuses and Surveys, 1970) this distinction would group Social Class 1 (higher professional) and 2 (intermediate) occupations together as middle class and Social Class 3 (skilled manual and non-manual), 4 (semi-skilled manual) and 5 (unskilled manual) occupations as working class. The Registrar General's scale is an attempt to group and order occupations on the basis of 'general standing within the community'. It is thus hierarchical and not based on any coherent theory of class relations. In contrast, Goldthorpe (1980) has developed a theoretically informed 'relational' scheme that attempts to account for both market and work situations in the allocation of occupations to social classes. In terms of Goldthorpe's scheme, the distinction being made in this study would place Class 1 (e.g. higher professionals, senior administrators, managers of large companies) and 2 (e.g. lower professionals, higher technical staff, lower administrators, lower level managers) together as middle class occupations and Class 3 (e.g. routine non-manual, clerical), 4 (e.g. small proprietors), 5 (e.g. lower grade technicians), 6 (skilled manual workers) and 7 (semi-skilled and unskilled manual workers) together as working class.

The above illustrates that the division into two groups is consistent with existing schemes. In this small-scale study we are obviously dealing with a limited range of occupations. The decision to treat clerical work as a working class occupation was made on the basis of the kind of work done by the interviewees and their spouses. All the cases of clerical work were routine and low skill in nature. In all cases there were also other factors, such as educational qualifications and form of housing, that supported classification as working class.

In allocating households to one group or the other it is not sufficient to take account of just the current occupation of the interviewee. In a number of cases, the interviewee was unemployed at the time of the interview. In these cases information regarding their

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[6] This, as Compton (1993) has observed, is the most commonly used scheme

previous employment was taken into account. For instance, Joanna Geary was unemployed at the time of the interview but had previously been a clerical worker and a shop assistant. Discussion of her previous work indicated that this had been low skill clerical work and manual work. This placed her in the working class category in our classification. In the case of dual parent households, data on the occupation of the interviewee's spouse was taken into account. In these cases, and in cases where the interviewee or their spouse had been in more than one form of employment, the occupation that fell in the 'higher' category was taken as determining the social class placement of the household. In the case of Heather Powell, for instance, her previous employment as a research scientist, rather than the current skilled manual occupation of her husband, determined the placement of the household in the middle class category. It is interesting to note that in all the cases in which this procedure had to be followed, either both parents claimed to be equally involved in carrying out the IMPACT tasks or it was the person whose occupation had determined the placement of the household in the middle class category who predominantly took responsibility for IMPACT (see Section 10.4.1).

### 9.2.2 RESULTS

The resultant grouping of households in terms of social class is given in Table 9.1 (overpage). Whilst the sampling procedure produced an equal distribution of middle class and working class households (14 middle class households and 14 working class households), it is not the case that the parents from the inner city schools were all working class and those from the suburban schools all middle class. From Table 9.1 it can be seen that the sample from the two suburban schools was more socially diverse than anticipated.

| Social class | School | Household |
|---|---|---|
| Middle class | Chelmer Grove | Hudson, Winters |
| | Higham Green | Chapman, Easthope, Howells, Murray |
| | Penbury | Barton, Burbridge, Greenaway, Khan, Kirkwood, Parry, Powell |
| | Sugden Road | Olowe |
| Working class | Chelmer Grove | Geary, Peters |
| | Higham Green | House, Paice, Patrick, Stuart |
| | Penbury | Collins |
| | Sugden Road | Baker, Bremner, Drake, Gibson, Rawlings, Thomas, Woods |

*Table 9.1: Households by social class*

The two suburban schools are close together. The housing in the catchment area of the two schools is largely detached and semi-detached privately owned housing, mostly built since the 1960s. The social heterogeneity of the population is due to (i) a small number of blocks of flats, providing relatively low cost privately owned and rented accommodation; (ii) a small number of houses owned by a housing association and rented to tenants; (iii) differences between the social characteristics of the owner-occupiers of houses built in the early phase of development of the area and those who moved into the area more recently. The third of these factors appeared to be the most important. The first phase of housing development in the area had been in a period of relative prosperity in Midbury, with a number of engineering companies being particularly successful. The position of the housing estate made it attractive to workers in nearby engineering plants and a number of skilled manual workers bought properties when they were first built. Some of these families have remained in the area. Following

marked increases in the value of properties, the second and subsequent waves of development have brought other kinds of families into the area. The most recent housing development, consisting of detached houses arranged in secluded closes has, it appears, brought some high earning professional families into the area. The consequent social differences between families from the 'old' and the new' estates were not mentioned at all by the teachers interviewed but were commented on by the parents.

The unexpectedly high proportion of middle class households in the Penbury sample can also be explained, in part, by reference to economic factors. The housing in the catchment area consists largely of small Victorian terraced houses. These are both rented and privately owned. The close proximity to the city centre had made these attractive to young professional couples. Stagnation in the housing market leading to owner occupiers having little, or even negative, equity made it difficult for couples who had bought property in the area to move out before having children, as they might have initially intended. The high proportion interviewees who were graduates and in professional occupations may also have been a result of the tacit principles of selection being employed by the teachers in identifying suitable parents to be interviewed.

As would be expected with classifications of this sort, there is a strong relationship between occupational grouping and differences in form of housing and level of educational qualifications[7]. Of the middle class group, all except one family were owner occupiers (they had moved to Midbury to enable one member of the family to study at a local university). Of the working class group, only four were not in rented accommodation (either local authority, privately rented or housing association). In terms of educational qualifications, at least one member of each of the middle class household was either a graduate or held professional qualifications (e.g. in accountancy). Only one person from a working class household held a post-school

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[7] See, for instance, Reid (1981) for examples of a wider correlation between occupational category and inequalities in income, health, education and so on.

qualification[8], in this case a vocational qualification taken as a mature student. The general characteristics of the two groups are summarised in Table 9.2.

| | Occupation | Educational qualifications | Housing |
|---|---|---|---|
| Middle class | Professional and managerial | Higher education degree or professional qualifications | Mostly owner occupiers |
| Working class | Skilled and unskilled manual, routine clerical | None, school level only or vocational qualifications | Mostly local authority, housing association or privately rented accommodation |

*Table 9.2: Characteristics of social class groups*

The differences in educational experiences and in formal qualifications in mathematics both between and within the two social class groups is taken up in the following section.

## 9.3 Pedagogic biographies

Information was collected on the level of qualifications in mathematics held by each of the interviewees (Q. 5.2). This was intended to give some indication of the mathematical resources on which parents are able to draw in carrying out IMPACT tasks. Additional information was gathered on each person's experience of learning mathematics at school, with particular attention being paid to making a comparison between this and what they saw as current methods of teaching mathematics (Q. 2.4). These questions explore one dimension of the pedagogic biography of the parent—that which deals with specialised pedagogic resources (i.e. specific to the teaching and

[8] Two of the interviewees, Joanne Geary and Debbie Peters, also successfully completed GCSE courses

learning of school mathematics). In addition to this, information was collected on the degree of involvement in and experience of contemporary pedagogic practice (e.g. through exploration of the extent of involvement of parents in schooling and other forms of education either in a professional or voluntary capacity). This enables us to explore the second dimension of the pedagogic biography of the parent—that which deals with the general pedagogic resources (i.e. those that are not specific to any given area of the school curriculum).

### 9.3.1 SPECIALISED PEDAGOGIC RESOURCES

#### *9.3.1.1 Qualifications in mathematics*

Within the working class group, level of mathematics qualifications varies between GCE O'level (or equivalent) and no formal qualifications. Some of the interviewees have intermediate qualifications such as mathematics combined with technical drawing or CSE mathematics. One parent, Trevor Paice, had taken mathematics beyond school level and learnt specific work related procedures as part of an apprenticeship programme (to become a toolmaker in an engineering plant). One of the parents, Joanne Geary, had successfully taken GCSE mathematics as a mature student having failed at school and another, Debbie Peters, was in the process of taking a part-time GCSE mathematics course. Of the 15 parents interviewed, four had GCE O'level or equivalent qualifications and 11 had sub-O'level qualifications or no formal qualifications.

The range of mathematics qualifications amongst the middle class parents is far greater. At one extreme there are graduates with either a mathematics degree (including one Cambridge graduate) or who studied some form of mathematics as a component of their degree (e.g. a statistics component in an economics degree). Six interviewees fall into the category of having A'level or post A'level qualifications in mathematics. All

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as part-time, mature students.

except one of these parents also saw themselves as using mathematics in their subsequent employment (e.g. as an accountant). In terms of mathematics, these seven parents have higher level qualifications than the teachers interviewed. At the other extreme there are middle class parents with no formal qualifications in mathematics (three in total). These are people who failed GCE O'level at school. Kate Murray, for instance, failed mathematics three times and stated that she was 'supposedly thick at maths'. Another of these parents, Elisabeth Howells, stated that she had struggled with maths and had felt 'hopeless' and 'stupid'. Of the eight middle class parents with GCE O'level or equivalent, two parents (Emma Kirkwood and Caroline Greenaway) had recently passed GCSE mathematics having failed GCE O'level at school. Table 9.3 gives a summary of the distribution of qualifications.

| | Middle class | Working class |
|---|---|---|
| A'level and above | 35% (6) | - |
| GCE O'level or equivalent | 47% (8) | 27% (4) |
| Sub-GCE O'level or no qualifications | 18% (3) | 73% (11) |
| Totals | 100% (17) | 100% (15) |

*Table 9.3: Distribution of mathematics qualifications*

From the table it can be seen that there are clear differences in level of qualifications in mathematics between the two groups. This marks a difference in the discursive resources available for the interpretation, realisation and evaluation of mathematical tasks in the home (this is discussed in detail in Section 10.6). However, these differences in qualifications may mean little in themselves. A higher level of performance in formal mathematics does not necessarily translate into greater confidence in the use of mathematics in everyday contexts (this is explored in research conducted

for the Cockcroft Report, 1982) nor does it imply greater facility in helping young children learn mathematics (see Askew et al, 1997). In addition it has been demonstrated by Carré and Ernest (1993) that holding a formal qualification such as GCE O'level mathematics or equivalent does not necessarily imply that a person is able to display the level of mathematical performance expected of an average 11 year old. These issues will be explored further in considering parents' commentaries on the IMPACT tasks they have carried out with their children.

#### *9.3.1.2 Experience of being taught mathematics*

The responses given to being asked 'how were you taught mathematics at school?' (Q. 2.4) were remarkably consistent across the whole sample. All interviewees made reference to either the use of 'traditional methods', 'rote learning, 'sheets of sums' or 'examples on the blackboard'. There was some slight variation with respect to whether the interviewees viewed their experience in positive or negative terms and whether they view the way in which their children are being taught maths as better or worse.

Even though a number of the parents have been successful in school mathematics, only two made favourable comments about their experiences in learning mathematics at school. Mary Gibson, a working class mother with a good O'level in mathematics, spoke about one particular primary teacher.

> I had this brilliant maths teacher when I was in school. He was the best one I've ever had. He taught me a lot about pie-charts and everything … and he was the only one who bothered to take any time teaching me anything to do with maths. So by the time I left there, I was really into numbers and figures and things and it just carried on throughout. So the way that he taught me, I'm teaching her.

This experience had clearly been influential. She viewed the manner in which her daughter was being taught mathematics as ineffective in comparison with her own experience and saw the IMPACT activities sent home as being less effective than the mathematics activities she carried out with her daughter at home. These included teaching her daughter alternative strategies for doing calculations. She felt that the

teachers disapproved of this and that it had led her into a critical relationship with the school.

Trevor Paice, a working class father who had gone from school into a technical apprenticeship, also spoke favourably of learning maths at school. In his case the manner in which he was taught mathematics was viewed favourably because the content related closely to the mathematics he was to use in his apprenticeship and subsequently in his work as a tool maker.

The account given by Elisabeth Howells, one of the middle class mothers, is more typical of the stated experience of the majority of the parents interviewed.

> Sitting watching the blackboard. And um, you know, you're expected to pick it up and if you didn't you thought you were stupid sort of thing, you daren't ask. I mean I wasn't very confident at school anyway and if I didn't understand it the first time round you thought you were hopeless.

Similarly, Judy Drake, one of the working class mothers, stated that 'when I was school it was sit down, sums were on the blackboard, nobody make a sound, sit still in your desk and do them'. She contrasts this with contemporary approaches to maths which she sees as being 'a lot more play oriented, from what I can see, now' and as using materials which are 'colourful, they're bright, they encourage them'. Another of the working class mothers, Julie Rawlings, states that:

> I mean we just sat in a classroom with a sheet in front of us and we were expected to do it. I mean they didn't tell us, () to do it and that was it, if we didn't know after that, we didn't know and that was it. Even if you asked for help it was you know, we've shown you and that's it. But here they seem to take you through it step by step and you know how to do it. But when I was at school it was just, it's on the board and that was it. If you didn't learn it that was it.

In these cases, the negative experience of learning mathematics acts as a background to the positive disposition of these parents to the manner in which their children are taught mathematics. Amongst the working class interviewees, there are, however, parents who clearly feel that their own negative experience of school mathematics affects their capacity to help their children. Janet Woods, for instance, says that:

Well I wasn't very bright at school so, but em yeah it is a lot different. I mean I'm sure there's words now that they use in maths that I don't even remember using. You know like it was just like subtract, divide, multiply when I was at school. I'm almost sure it was. And now there's these big words, you know like, and shapes and that. I mean to be honest Darren knows more shapes than I do. He says oh mummy that's such and such shape and I goes oh lovely is it and then I'm thinking well is it. Do you know like, and I have to go and get a book of like shapes to check that he was right.

In the same vein, perceived *similarity* between the contents and methods of their own school mathematics and contemporary approaches places some parents, where they feel they have been successful, in a position to help their children. Vicky Bremner states that:

> I'm so used to doing like multiplying, adding up, taking away, whatever, when I was at school myself that I would be able to tell him how to do it ... I have seen a few times where there's like a sheet of paper and they've boxes and like and say so and so plus so and so equals. That's how we was taught at school so, you know, I find them simple myself, so. You know, as long as they don't start doing things, well, as long as Tony understands what he's doing then, you know, if I can help him in any way then, you know, I will.

It is not possible, on the basis of these interviews, to draw a direct relationship between social class and experience of school mathematics. Negative experiences are recounted by both working class and middle class parents. These are broadly consistent with other research in this area (for instance Buxton, 1981, 1991). The key difference here appears to be that, no matter how negative the experiences of school mathematics of members of the middle class parents in the sample (Louise Burbridge states, for instance, that 'A lot of my mathematical experience was fear'), all feel that they are in a strong position to support their children in their mathematics education. This is considered further in the discussion of general pedagogic resources below.

#### *9.3.1.3 Mathematics and work*

It was the parents that had either no formal qualifications or very basic qualifications in mathematics who drew attention to the relationship, or lack of relationship, between school mathematics and work. Kate Murray, a middle class mother who had failed O'level maths three times, indicates that, though she does not feel that her failure at

maths has inhibited her progress at work, she does not wish to communicate this to her children.

> I failed! ((laughs)). Three times. And I've managed perfectly well without it. You know. But I don't promote that. And I wouldn't ever let my children get away with that idea ... I have to do certain calculations at work, which are quite complex calculations I suppose, but I tend to do them in my head as a check. And, or parts of them, I won't profess to be, you know, brilliant at mental arithmetic, sort of percentages and several decimal places are concerned. With some of the calculations I had to do, I had to use that. Cos I mean I know how to apply it. And, so I don't feel I've ever suffered as a result. Being supposedly thick at maths.

One other middle class mother, Sian Parry, reflected on this relationship. She presents herself as adopting the strategy of avoiding work which she sees as involving mathematics.

> Em, I had a job as a secretary for a while where I did, em, the order books and that sort of thing. But then I used a calculator anyway ... I've never looked for work which really involves figures or. I just steered away from that. Probably, partly, as I say, because the way it was taught and, you know, it got ingrained that it was just hard, tedious work. And there was no, em, well it just didn't seem to be relevant at the time.

Of the working class parents who commented on the relationship between maths and work (11 in total), eight draw a direct link between work with money at work and mathematics. For example, Janet Woods states that

> I worked in a market when I left school. And you know like there weren't these machines, you know like these machines that do all the adding up for you now. So you know like I can add up quite quick. Yeah. And you know like and then I worked in a pub and you know like so I learnt from then.

Similarly Joanna Geary says that

> I've always had maths like adding up and that sort of side because I'm working, it was working with tills and things and bills and whatever and adding those up I've always had the maths there. And like even now doing the household bills you've still got it there all the time so you've always got that sort of basic maths going.

Other workplace activities such as counting stock (Irene Collins), collecting pools money (Joan Patrick), calculating benefits (Judy Drake), listing items and prices in a catalogue (Alison Stuart) and finding the centre of a page when typing (Ann Paice) were

mentioned as being mathematical activities. Just one parent (Trevor Paice, the only working class father interviewed) indexes more specialised uses of mathematics at work.

> I'm in the maintenance so um, have to use micrometers and measuring instruments, yes. And trig. A lot of trigonometry. Um, could be used in our areas. Especially if you're in the um, the inspection areas. But, and in the tool room you'd have to use trig if you were, if you were obviously in the grinding section. You'd have to use trigonometry using the sine bar, do you know a sine bar?

In contrast, the middle class parents with advanced qualifications in mathematics who were or had been employed in jobs which would seem directly to involve mathematics (Heather Powell, Helen Winters, Ian Chapman, Tom Barton, Anwar Khan, Alan Easthope) did not draw out a relationship between workplace activities and school mathematics. Rather, the manner in which they discussed IMPACT and other school mathematics activities indexed the relationship between their mathematical qualifications and school mathematics as more important. Their mathematical qualifications and expertise had enabled them to take up particular career opportunities. As can be seen from the quotes above, however, for some of the working class parents work acts not just as the site for the use and application of mathematical skills and knowledge, but as the site of acquisition of what they see as specific mathematical skills or procedures.

## 9.3.2 General pedagogic resources

### *9.3.2.1 Working in educational settings*

The parents interviewed had varying levels of first hand experience, as adults, of schools and pedagogic practice in formal settings. In some cases there was direct occupational involvement in schooling. Amongst the middle class parents, two of the interviewees (Charles Olowe and Louise Burbridge) had professional school teaching experience. Emma Kirkwood was employed as a primary classroom assistant and thus had direct occupational involvement with primary classrooms but not as an educational

professional (although she is a graduate and intends to go on to train as a teacher). Two other middle class interviewees could be considered to be educational professionals but had not worked with children and had no experience of working in a school setting: Tom Barton worked as a trade union educator and Sian Parry had worked as a teacher of English to speakers of other languages.

A number of the working class parents had worked in primary school settings but not in a pedagogic capacity. Judy Drake, Julie Rawlings and Vicky Bremner had all worked as lunchtime supervisors in primary schools. Susan Thomas worked in a social services day care centre with pre-school children and thus also had occupational involvement with children but not in a formal educational setting nor in a formal pedagogic capacity.

Of those parents with an occupational involvement in education it can be seen that there are clear differences between the positions held the middle class parents and those held by the working class parents. The former are mostly formally trained (Emma Kirkwood and Tom Barton being the exceptions) and in a professional pedagogic position whilst the latter are untrained (with the exception of Susan Thomas, who held a vocational qualification in nursery nursing) and are in a semi-skilled or unskilled, non-pedagogic position. The one middle class parent who works in the classroom in an untrained capacity (Emma Kirkwood) has, by virtue of her educational qualifications, the possibility of training as a teacher and intends to follow this career path. This difference between the working class and middle class parents is hardly surprising given the occupational basis for the division into social class groups. The form of the division of labour within the school reflects that of the wider society, with a high degree of insulation between the hierarchical career structure of the teachers and the work of the ancillary workers. This will be discussed in more detail later. What is important here is that the middle class parents employed within the educational sphere have been, by virtue of their positions, inducted into educational discourse and engaged directly in

forms of professionalised pedagogic practice. In contrast the working class parents working in educational settings are largely untrained and have no immediate involvement in the official pedagogic practices of the classroom.

#### *9.3.2.2 Helping in the classroom*

There are some working class parents in the sample who do have first hand experience of primary school classrooms. All four of the schools encouraged parents to come into the school and become involved in work in the classroom as unpaid volunteer helpers. From both the parent and the teacher interviews, all the schools appeared to be successful in this. The involvement of parents as unpaid classroom helpers produces a group of people who have some direct contact with the practices of primary school teachers but not in a professional capacity. Seven of the working class a parents interviewed (all women) had experience as classroom helpers (Debbie Peters, Joanna Geary, Irene Collins, Joan Patrick, Judy Drake, Mary Gibson and Julie Rawlings). It is clear from all the accounts given by these parents that they were engaged in largely in the supervision and regulation of classroom activities. For instance, Judy Drake describes her involvement with project work in which children in make short videos of themselves as 'I'm just there to sort of show them how the machine works and make sure they don't run riot'. She elaborates:

> Basically the activities each week they rotate it so you get a group of four [Right] and me and my sister and Mrs Campbell are doing, any of the volunteers who want to come along, we each have a little group and we do cookery, I mean at the, the time before I was doing science, you know, about the muscles and reflexes. And, like this six weeks, it's each group gets a chance to make it's own short video tape. [Oh, right] Idea being they get to see what they look like on camera and what they sound like. They're coming up with some good ideas.

Julie Rawlings describes what she did a parent helper as 'sitting with the kids and talking to them about the things, the projects, they were doing'. This is not to suggest that this classroom involvement was not seen as productive. Julie Rawlings said not only that she 'really enjoyed' this work, but that she had also learnt more 'being

around' in the classroom as a helper than she had done as a pupil at secondary school. She stressed the enjoyment she experienced in working with children in school. She also stated that it had given her insight into how the children were taught mathematics and led her to take a broader view of what counted as a mathematical activity. Similarly, for Mary Gibson time spent in the classroom has given her a clearer picture of the manner in which the teaching of mathematics has changed over time and enabled her to mark out more clearly a division of pedagogic responsibility between herself, as a parent, and the school.

> Well I've been coming in and helping out at the school ever since me niece was here and I mean she's been left three years now. So erm, we've had quite a long time of it. You can see how the maths have slowly changed through the years. But I mean this year it seems to have changed quite drastically really. I don't know why. It just I think it's because everything's becoming more metric and to be quite honest I'm more of an ounce and pound person meself. I can't stand the, it gives me headache thinking about it. But, erm, knowing like that Susan's got to learn this, then it's better for her to learn it with somebody that she's going to trust. And like I say all I do is I teach her the basics and then I'll but out and let the school teach her all about the metrics and everything else. I'll just stay in the background and help her out when she needs it.

It is clear from this that, although she is in a position to see what is going on in the classroom and relate this to her own experience and local pedagogic practice, the principles by which official pedagogic practice is constructed and evaluated are not available to her. This classroom experience also enables parents to see their own children in the wider context of the class and to place them in relation to other children. In Joanna Geary's case this comparison is focused on the behaviour of her son and how this might reflect on her in the eyes of the teachers.

> I look at the girls at school and I think yeah I can see myself there. And they are more studious and they will get on with their work and they don't mess around and they want to do it. Whereas I look at the boys and I think Jason's not that bad, he's a typical boy, but he's not as bad as some of them and, you know, you just feel like ringing their necks to get them to sit down and do it. But and I'm there, I do think sometimes oh I hope they don't think he's like me. Because I'm not like him at all, you know.

The involvement of working class parents as voluntary helpers in the classroom was far more common in the Key Stage One (infant) classes than in the Key Stage Two (junior)

classes. Joan Patrick indicates that, whilst she is aware of the limitations placed on what she can offer, she both enjoys the classroom work and feels that it is helpful to the teachers.

> Well that's what I'm thinking next year with her going to juniors you see cos, I'm thinking you know will they still want help. Cos I do enjoy it and I think you can help the teachers, I know we're not educated, we're not qualified like they are. But I like to think we do help towards helping you know, making it a bit easier for them. Yeah. [So as far as you're concerned you're] I would like to still help next year, yeah, yeah, I do know other mums that have carried on doing it but it's, some teachers are not so keen are they? But I shall still try.

Of the middle class parents interviewed, two had been volunteer classroom helpers (Carol Easthope and Caroline Greenaway) and one had spent some time in the classroom following her son's return to school after a serious illness (Sian Parry). All stated that this had been of experience had been of value to them. Caroline Greenaway had helped with cooking when her sons were in the reception class. She presents this experience as giving her some insight into the value of these kinds of activities within the context of the school. She gives the following example of the pedagogisation of an everyday task:

> I suppose what I've learnt from my cooking with reception as well that you, you find opportunities to pull different bits out and I suppose in what I've done with the boys here, but, you know all those things can turn into a cake at the end and that you're looking at a recipe and that things have names and I always used to take my scales in I think, till I ran out of muscle so that, it was an old fashioned scale and they could see things going up and down rather than just reading it off. So I found their going to school really exciting, you know, enjoyable getting into that world.

She recognised, however, that this experience was not sufficient induction into the official pedagogic practices of the school and cites the workshops run for parents by the school's mathematics co-ordinator, Mr Gibbs, as providing further insight.

> Well the three classes that Mr Gibbs did for parents, I think they made a big difference to me, yes. You just seeing stuff and seeing what, he showed these wonderfully complicated things you could do for multiplying which I've now forgotten. But now when they come home and they talk about tens and how if you put ten lots of ten together and you make it, I mean if they'd told me that before I'd been to Mr Gibbs I'd see what they were on about but now I can see it all and I think oh yes great because I've felt it too.

The quotations given here give some insight into the different orientations towards classroom experience of the working class and middle class mothers. It is important to note that some of the working class mothers also did other (paid) work around the school (for instance, as lunchtime assistants) and were clearly associated with the supervision of children and with manual tasks. All the middle class parents who had helped in the classroom were, on the other hand, relatively highly academically qualified (either graduates or with other post A'level qualifications). They were in a position to associate themselves more clearly with the teacher and the official pedagogic practice of the classroom and would have been able to go on to train as teachers (all three had considered doing this; Emma Kirkwood, a paid classroom assistant, was going on to train as a teacher).

All four schools had made attempts to encourage parents to help in the classroom. In none of the households in my sample had fathers volunteered to help in their children's classrooms. Clearly not all parents are in a position to take up this invitation, by virtue of work or other commitments or because they do not feel confident to put themselves forward to help or do not see the value of doing so. It also has to be acknowledged that not all parents are welcome. As Ms Chadwick states:

> I think probably over the last few years in this school we've done more and more to try and encourage parents to become involved in class and class lessons. Probably more, obviously a lot more down in the Infants than further up the school. I've always liked the idea of parents and I have one wonderful mum who comes in and helps. It can be a problem if you get the wrong mum or the wrong person. And then it's hard to get rid of them and it becomes a burden which has happened once or twice to me.

## 9.4 Conclusion

From the discussion above it can be seen that, not only can the parent sample be partitioned in terms of social class, but there are clear differences, both within and between groups, in the specialised and general pedagogic resources available to the

parents. There are clear differences in individual levels of formal qualification in mathematics and in the distribution of the qualifications between the working class and middle class parent groups. In particular there is one group of six middle class parents with mathematical qualifications that are higher than those of the teachers interviewed. This group of parents I will describe as *discourse oriented* because, from the interviews, they can be seen as drawing on their access to *specialised* mathematical discourse in their discussion of the IMPACT tasks and of local and official pedagogic practice. As I will argue later, all members of the middle class group share a similar pedagogic orientation, however. Those middle class parents who are not classified as discourse oriented I have thus identified as *pedagogy oriented.*

There is no equivalent to the discourse oriented group amongst the working class parents. There is, however, a distinct division amongst the working class parents in terms of the *general* pedagogic resources on which they draw in the interviews. The distinction here is between those parents who have some experience of helping within primary classrooms and those who do not. I will describe the former working class group as *pedagogy oriented.* There are eight working class mothers in this group. The working class parents who do not have classroom experience I have called *locale oriented* to reflect the use of predominantly local resources in their accounts. The distribution of households in terms of these groupings is given in Table 9.4.

| | | | |
|---|---|---|---|
| Middle class | Discourse oriented | Barton, Chapman, Easthope, Khan, Powell, Winters. | 6 |
| | Pedagogy oriented | Burbridge, Parry, Greenaway, Howells, Hudson, Olowe, Kirkwood, Murray. | 8 |
| Working class | Pedagogy oriented | Collins, Drake, Geary, Gibson, Patrick, Peters, Rawlings, Thomas. | 8 |
| | Locale oriented | Baker, Bremner, House, Paice, Stuart, Woods. | 6 |

*Table 9.4: Middle class and working class sub-groups*

The nature of these distinctions within and between the middle class and working class groups will be considered in the analysis presented in the subsequent chapters, in particular in the analysis of the interviewees' readings of IMPACT tasks in Chapters 10 and in the discussion of semantic orientation in Chapter 11.

From the discussion of discursive resources available to parents, there are other divisions that could be made. There are, for instance, middle class parents who are or have been teachers or who have primary classroom experience in either a voluntary capacity or as a paid classroom assistant. In the following chapters, I will discuss these further distinctions where relevant. In general terms, however, there was no clear and consistent difference between the responses of this group and the other middle class interviewees. Members of this group were quite clear in indexing when they were drawing on their teaching or other classroom experience and in elaborating what they felt the benefits of having this experience to be. I wish to argue that, as all members of the middle class group share a similar pedagogic orientation, classroom experience and other contact with the school constitute additional sources of information rather than acting as the basis of a different orientation to official and local pedagogic practice. As has been pointed out above, middle class parents who help in the classroom are, by virtue of their educational background and social location, in a somewhat different relationship to the teacher, to the official pedagogic practices of the school and to teaching as a profession.

# Chapter 10 Midbury parents II—reading and realisation of IMPACT tasks

## 10.1 Introduction

In the previous chapter, I classified the households of the parents interviewed in terms of social class. This classification is predominantly based on the occupational histories of, where relevant, both parents. Reference is also made to general educational level and housing. The classification as working class or middle class marks a distinction between manual and routine clerical work on one hand and skilled non-manual and professional occupations on the other. In other words, this division is broadly consistent with a distinction between manual and intellectual labour. Following allocation of parents to appropriate groups, I explored the pedagogic biographies of the interviewees. This is an attempt to describe the experiences, or processes, from which the discursive resources available to parents are derived. In doing this, I have attempted to avoid the adoption of the static concept of acquisitive 'capital' that has been used in much recent sociological research on social class and schooling (see the review of research in Chapter 3). The pedagogic biographies of the parents are seen as affecting not just the resources available to them in reading, realising and evaluating school mathematics tasks, and other pedagogic tasks, but also as affecting the orientation or disposition of parents towards official and local pedagogic practice. In relation to specialised pedagogic resources, that is those that relate to school mathematics, I have considered differences in formal qualifications, experience of being taught mathematics and use of mathematics in work and everyday contexts. In relation to general pedagogic resources, that is those that are not specialised to school mathematics, I have considered differences in experience of working in educational settings and helping in the classroom. From the analysis of the interviews, I have shown that there are differences

both between and within the social class groupings. With respect to this, I have demonstrated that there is variation in the form of experience, the range of experience and the effects that these differences have according to social class position. For example, the nature of the social division of labour within school means that the experience of paid or voluntary work in educational settings has different consequences for middle class and working class parents. Similarly, levels of qualification have different effects on confidence levels and approach to school mathematics tasks for members of different social class groups. On the basis of the discussion of pedagogic biographies, I further divided each social class group into two. The middle class parents were divided into a discourse oriented and a pedagogy oriented group. The working class parents into a pedagogy oriented and a locale oriented group.

In this chapter, I will incorporate the distinctions made within and between groups into consideration of parents' reading and realisation of IMPACT tasks.

## 10.2 Conditions of realisation of IMPACT tasks within the home

As we have seen in the discussion of IMPACT in Chapter 2, whilst the possible differentiating effects of potential differences in parents' pedagogic and discursive resources are played down, considerable attention is paid to attempting to moderate the effects of possible differences in the conditions of realisation of IMPACT tasks. Consideration is given, for instance, to who within the household carries out the task with the child and to the domestic resources that are required to do the task.

### 10.2.1 Domestic division of labour with respect to IMPACT and other pedagogic tasks

Data collected as part of IMPACT project research and evaluation suggests that it is mostly mothers who carry out the tasks with the children. Whilst this is borne out by

my empirical work, the more detailed data available makes it possible to explore differences in the stated distribution of responsibility for IMPACT tasks within the household.

| | Middle class | Working class |
|---|---|---|
| Mother only | 14% (2) | 72% (10) |
| Shared (mother mostly) | 29% (4) | - |
| Shared (equally) | 36% (5) | 21% (3) |
| Shared (father mostly) | 14% (2) | 7% (1) |
| Father only | 7% (1) | - |
| Totals | 100% (14) | 100% (14) |

*Table 10.1: Domestic division of labour with respect to IMPACT*

The table show a marked difference between the middle class and the working class groups. Eight out of the ten working class mothers who said that they took sole responsibility for doing IMPACT activities with their children were single parents and thus sharing responsibility for the tasks with a spouse was not an option. It is clearly important to take care in drawing conclusions from this data.

Looking at the reasons given for a particular distribution of responsibility for carrying out IMPACT tasks, it can be seen that in the middle class homes there is a clearly stated division of labour in terms of perceived expertise which, combined with the contingencies of work and domestic arrangements, act to shape who does what. This is particularly marked for the group of middle class parents with post A'level qualifications in mathematics. For instance, Helen Winters, a mathematics graduate, states that

> It varies. Sometimes my husband does because he's at home most of the time, he's a house-husband, I'm at work. So it will depend what it is and sometimes he does it sometimes I do. I think if it's more mathsie I do it.

Tom Barton, another of the parents who has post A'level qualifications in mathematics, says that he takes responsibility for the mathematical tasks that his children bring home whilst his wife takes on the reading and language based tasks. Alan Easthope and Anwar Khan also claim to take prime responsibility of doing the IMPACT tasks. Heather Powell says that she shares responsibility for doing IMPACT tasks with her husband but that

> he actually will say now with their maths and things, oh well I can't do that, I don't know how they do that and leave it to me. Which is sad.

The remaining middle class parent with post A'level qualifications in mathematics, Ian Chapman, does not take prime responsibility for the IMPACT tasks. These are mostly done by Sophie Chapman as she is with the children after school. They do, however, discuss the activities.

All three of the middle class mothers without formal qualifications in mathematics take sole responsibility or prime responsibility for the IMPACT tasks. All three also refer to the mathematical expertise of their partners with respect to helping with school mathematics when their children get older.

### 10.2.2 TIME, SPACE AND MATERIAL RESOURCES

As we have seen, the IMPACT literature pays particular attention to possible differences in the time, space and material resources available to parents to in doing IMPACT tasks with their children. This is reflected in the responses of the teachers in my sample. Consideration is given, for example, to the need to ensure that the tasks set do not make unreasonable material demands on the parents.

The parents interviewed express little concern about this, however. Finding time for IMPACT activities was said to be no problem by the majority of the interviewees. In those cases where some problems were identified, these were related to the setting of the tasks at inconvenient times by the school (Joanna Geary), the child not bringing the task home on time (Emma Kirkwood) or clashes with work (Julie Rawlings) or family (Mary Gibson) commitments. In 11 households there was no regular time at which the tasks were done, in 13 households the tasks were usually done at the weekend and in 4 they were usually done during the week. In none of the households was a particular set regular time put aside for IMPACT. In all the households the tasks were carried out in 'open' locations i.e. the lounge or the kitchen. Tom Barton said that whilst the younger of his children would do the tasks in the living room or kitchen, the older children would do the work in their bedroom. It is thus not possible to differentiate between the sub-groups in the sample on the basis of statements made about where and when IMPACT tasks were carried out.

The situation is similar with respect to the resources required for the tasks. Clearly, as has been seen from the teacher interviews, care is taken to ensure that the resource demands of the tasks sent home are appropriate. All interviewees stated that they had few or no problems finding the materials needed. Where single examples of problems were mentioned, these were to do with a degree of cultural specificity to the materials required. Helen Winters did not have a set of darts required for one activity; the Hudsons, active members of a particular Christian sect, had to find substitutes for playing cards; Mary Gibson did not have a teapot; Janet Woods found it annoying to have to buy pasta specially for some activities, but did so anyway. Angie House said she found it wasteful to have to cut up envelopes. Kate Murray and Vicky Bremner said that they sometimes found it difficult to find the number of objects required (e.g. bottle tops) and often used substitutes. Despite these occasional difficulties, none of the interviewees said that the resource demands made were unreasonable.

## 10.3 Orientation to official pedagogic practice

At several points in the interviews, the orientation of parents to the official pedagogic practices of the school was discussed. For instance, each parent presented what they felt to be the benefits of IMPACT for themselves, their children and the school, thus positioning themselves and their domestic practice with respect to the practices of the school. I will not present a detailed analysis of this material here. Instead I have, for the purposes of this exploration of modes of 'pedagogic capital', selected just two indicators of orientation towards official pedagogic practice: parents' stated level of confidence in helping their children with school mathematics and parents' stated levels of enthusiasm for IMPACT. In the latter case, a comparison is made with the ratings given by teachers. In order to investigate the relationship between domestic practice and official pedagogic practices, I have looked at the statements made by parents about the things they do at home which they feel help their children with mathematics at school.

### 10.3.1 Confidence in helping with school mathematics

Parents were asked up to what level they felt confident to help their child with mathematics (Q. 2.1). The answers given were classified as either (i) to upper secondary (ii) to upper primary (iii) lower primary only (iv) not at all. From inspection of the results, summarised in Table 9.6, it can be seen that, in addition to the marked differences between the two groups of parents in terms of qualifications in mathematics, there are clear differences in the levels to which they feel confident in helping their children with mathematics.

| | Formal qualifications in mathematics | | | | | |
|---|---|---|---|---|---|---|
| | Middle class | | | Working class | | |
| | A'level and above | O'level and equiv. | Sub O'level | A'level and above | O'level and equiv. | Sub O'level |
| Confident to upper secondary level | 83% (5) | 25% (2) | - | - | - | - |
| Confident to upper primary level | 17% (1) | 75% (6) | 100% (3) | - | 100% (4) | 55% (6) |
| Confident to lower primary level | - | - | - | - | - | 27% (3) |
| Not confident at all | - | - | - | - | - | 18% (2) |
| Totals | 100% (6) | 100% (8) | 100% (3) | - | 100% (4) | 100% (11) |

*Table 10.2: Confidence according to class and mathematics qualifications*

The middle class parents interviewed all indicated that they felt confident in helping their children whilst at primary school, including those parents with no formal qualifications in mathematics. Lower levels of confidence were expressed by the working class parents with sub-O'level or no qualifications. Two of these parents did not feel that they had a sufficient grasp of mathematics to help their children with school mathematics at all.

From consideration of parents' qualifications in mathematics and expressed confidence in helping their children, it can be seen that there is a wide spread of levels of qualifications amongst the middle class parents but a narrow spread of levels of confidence and, conversely, there is a narrower spread of levels of qualifications amongst the working class parents but a wider spread of levels of confidence. This suggests that there is not a direct relationship between parents' qualifications and

confidence in helping their children with mathematics. It also suggests that, whatever the relationship, this might not be the same for middle class and working class parents.

### 10.3.2 ENTHUSIASM FOR IMPACT

The teachers were asked to identify those parents they felt to be enthusiastic about IMPACT and those who they felt to be unenthusiastic. The sample of parents was selected to maximise the probability of an equal distribution of enthusiastic and unenthusiastic parents between the working class and middle class groups. In terms of the teachers' ratings of parental enthusiasm for IMPACT the actual distribution is given in Table 10.3.

| | Middle class | Working class |
|---|---|---|
| Enthusiastic | 6 | 8 |
| Unenthusiastic | 8 | 6 |

*Table 10.3: Distribution of enthusiastic and unenthusiastic parents 1*

In the interviews parents were asked where they would place themselves on a scale from enthusiastic to unenthusiastic (Q. 3.8) and to explain why they positioned themselves in this way (Q. 3.9). On the basis of responses to Question 3.8, I have rated parents as either enthusiastic, enthusiastic with qualification, having mixed feelings, unenthusiastic with qualification, unenthusiastic. Table 10.4 (overpage) gives the parents' self-rating according to social class. Clearly, there is a full range of orientations to IMPACT with the balance, on parents' self-ratings, towards the enthusiastic end of the scale. There was a close match between the teachers identification of enthusiastic parents and those who placed themselves as enthusiastic without qualification. The two exceptions were Helen Winters and Susan Thomas, both of whom were rated as

unenthusiastic by their child's teacher, but rated themselves as very enthusiastic about IMPACT. The kinds of qualifications offered by parents seemed in many cases to be interpreted by teachers as placing the parents in a critical relationship with IMPACT. In a number of cases, however, the qualifications were minor and parents still expressed an overall favourable orientation to IMPACT.

| | Middle class | Working class |
|---|---|---|
| Enthusiastic | 4 | 5 |
| Enthusiastic with qualification | 3 | 1 |
| Mixed feelings | 5 | 5 |
| Unenthusiastic with qualification | 1 | 2 |
| Unenthusiastic | 1 | 1 |
| Totals | 14 | 14 |

*Table 10.4: Distribution of enthusiastic and unenthusiastic parents 2*

Of the four groups identified in Section 9.3.3, the most marked difference between teacher ratings and self ratings is in the discourse oriented middle class group. Four of the six members of this group were rated as unenthusiastic by the teachers. However, only one parent in this group rated themselves as unenthusiastic (Tom Barton), and this was only in relation to IMPACT for older children; he rated himself as enthusiastic, with some reservations about IMPACT for younger children. The members of the locale oriented working class group were more ambiguous about IMPACT than the teacher ratings indicate. For the other two groups, there was a close match between the teacher ratings and self-ratings.

### 10.3.3 OFFICIAL AND LOCAL PEDAGOGIC PRACTICE

Interviewees were asked to describe any activities, other than IMPACT, that they did at home which they felt would help their children with mathematics at school (Q. 2.2). They were also asked whether any of the things they do or could do would be more effective than IMPACT (Q. 2.3). The responses to these questions give some insight into the range and distribution of forms of pedagogic practice within the home and how these relate to official pedagogic practices. From the interviews, a distinction can be made between those activities that are explicitly carried out for pedagogic ends (for instance, the use of mathematics workbooks purchased by parents for use with their children) and those everyday activities that the parent co-opts for either explicit or implicit pedagogic purposes. It must be stressed that we cannot, on the basis of the interviews, make statements about what parents actually do in domestic settings. We can only explore what forms of activity they see as having pedagogic potential and how they evaluate IMPACT in relation to these.

All the parents interviewed gave some examples of things that they did with their children that they felt helped them with mathematics at school. There are, however, marked differences between the groups with respect to the kinds of activities mentioned. All members of the middle class discourse oriented group said that they supplemented school work with some form of formal arithmetic teaching at home. All had used workbooks (purchased, for instance, in supermarkets), to varying degrees, in their teaching of arithmetic or multiplication tables. The notable features of the accounts given by members of this group are the stress placed on teaching, the manner in which this is based on the perception of a problem or an assessment of the child, and the differentiation between children in terms of age, attainment and aptitude. The stress placed by this group of parents on the direct teaching of arithmetic is in marked contrast with the position taken by the members of the middle class pedagogy oriented group. In

this group, only Louise Burbridge (a former teacher) said that she had used mathematics workbooks. For all other members of the group, the embedding of mathematics learning in other domestic activities was prioritised. For example, Sue Hudson stated that 'there's nothing that I could point to that we sit down and plan as extra maths to do with the kids' but rather these things were done 'probably more unconsciously than intentionally'. For instance, 'estimation of distance when we're walking and things like that, how far do you think we've walked?' Similarly Kate Murray stated that 'we don't do anything on a formal basis' and 'we probably do it without realising I think'. She gives as examples everyday contexts in which questions about time, distance and money can be raised. This distinctive feature of this group is that, whilst not playing down the importance of 'basic maths' such as knowing the multiplication tables and competence at mental arithmetic, they stress that the teaching and learning of mathematics in the home takes place in the context of everyday domestic activities rather than in formal teaching sessions with specialised materials such as workbooks. The contextualisation of mathematics teaching and learning in this way more closely matches the image of mathematics learning in the home favoured by the teachers than does the more explicit and decontextualised teaching of the discourse oriented group. The parents in this group are identifying everyday opportunities for pedagogic action rather than marking off particular periods of time and locations for specifically pedagogic purposes.

The stated practices of members of the working class pedagogy oriented group bear some similarity to the middle class pedagogy oriented group. Most of the group identify participation in everyday activities as being to do with school mathematics. In all the examples given by the parents, the scope of the mathematics is extremely limited (predominantly counting). The position adopted by these parents appears to be distinct from that taken by the members of the middle class pedagogy oriented group in that it is the engagement in the activity, and the basic arithmetic involved, that is presumed to develop mathematical skills and understanding. This *implicit* form of pedagogy bears a

close resemblance to the manner in which the realisation of school mathematics in domestic settings is represented in the booklets for parents discussed in Chapter 5. In contrast, the members of the middle class pedagogy oriented group are utilising the potential of everyday activities and domestic settings for *explicit* pedagogic action. Though two members of the working class pedagogy oriented group say that they use mathematics workbooks, neither refer to the incorporation of the workbooks into an explicit pedagogic programme of the sort described by members of the discourse oriented middle class group.

None of the members of the locale oriented working class group adopt the 'mathematics is everywhere' position taken by some members of the pedagogy oriented group. Shopping was the everyday activity most often mentioned when asked 'Do you do any other things at home with your children that helps them with their maths at school?'. In all these cases, the form of the relationship between shopping and learning mathematics was, however, not clear. In each case shopping appeared to be presented as of value in its own right. In taking part in shopping, the children learn to shop, which includes the acquisition of the necessary arithmetic operations. Shopping constitutes both the context of acquisition of the requisite skills and the context of their deployment. In this sense, the form of pedagogic relation most closely resembles a *tacit* relation, in which the practices associated with shopping are modelled. Shopping is not being appropriated as the context for the establishment of an explicit pedagogic relation (i.e. it is not being used as a context to teach explicitly about something else, such as addition or subtraction) as it might be by members of the middle class pedagogy oriented group.

## 10.4 Reading and realisation of IMPACT tasks

In the previous chapter I mapped out the characteristics of the teachers' ideal realisation of IMPACT tasks. From this I identified five elements in the realisation of IMPACT tasks in the home which are valued by the teachers: parents should organise, participate, motivate, question and extend the task. In addition to outlining the ideal form of realisation of the tasks, teachers made a number of evaluative comments about parents (both individual and general evaluations). In analysing these, I identified six forms of parental engagement with the task: four pedagogic modes of engagement (collaborator, instructor, demonstrator and monitor) and two non-pedagogic modes (active and passive). Of these, only the collaborator mode was viewed positively by the teachers. In this section I will explore the extent to which the statements made by parents relate to the stated priorities of the teachers and to the criteria they are using in making judgements. Clearly we are dealing here with what parents and teachers say in the context of an interview, not with observations of what they do. It is thus important to stress that the focus of the analysis is the extent to which parents demonstrate, through how they approach the questions and what they say, access to the principles of realisation of school mathematics tasks in the home and how they position themselves with respect to the school.

One key aspect in the realisation of the task is how parents and teachers read the task in relation to school mathematics. In the first part of this section, I compare teachers' and parents' readings of a common IMPACT task. Following this I consider the range of modes of engagement in IMPACT tasks represented by the responses of the parent interviewees.

### 10.4.1 READING TASKS: 'HOW MUCH IS YOUR HAND WORTH?'

All parents and teachers were given the 'How much is your hand worth?' IMPACT task to discuss. Parents were asked to consider how they would do the task with their child, how they would judge whether the activity has been successful or not and what they thought the activity had been designed to teach (Q. 1.8).

#### *10.4.1.1 Mathematical content*

The procedure and categories developed in the analysis of the teachers' discussion of the task (see Section 8.4.1) were used to analyse the statements about the school mathematics potential of the task made by parents. As before, general and specialised areas of content are identified in each account. General area scores are based on the identification of broad areas of mathematical content (money, counting, calculation, measurement, shape). Specialisation scores are based on the identification of specific sub-topics within the broad areas (e.g. addition, subtraction, multiplication or division as specific aspects of calculation). The scoring for each parent interview is given in Appendix 6. In order to make a comparison between the readings of the middle class parents who have advanced mathematics qualifications (discourse oriented) and those who do not (pedagogy oriented) and the working class parents with classroom experience (pedagogy oriented) and those who do not (locale oriented), I have grouped the interviewees and calculated average general area and specialisation scores. These are presented in Table 10.5 (overpage), together with the average scores for the teachers.

From the table it can be seen that the discourse oriented group of middle class parents on average identify more general areas of school mathematics than the pedagogy oriented group. They also identify more sub-topics within the general areas. Even more marked is the difference between the working class pedagogy oriented group and the locale oriented group. The working class locale oriented group appear to have particular difficulty in identifying the school mathematics content of the task. Given the low level

of mathematics qualifications of this group, this might be no surprise. The difference in the mathematics qualifications between the two working class groups is, however, slight. Looking at individual cases within the working class sample, there is no clear relationship between maths qualifications and their analysis of the task.

| | Number in group | General area total score | General area average | Specialisation total score | Specialisation average |
|---|---|---|---|---|---|
| Teachers | 8 | 29 | 3.63 | 22 | 2.75 |
| Middle class (discourse) | 6 | 15 | 2.50 | 10 | 1.67 |
| Middle class (pedagogy) | 8 | 13 | 1.63 | 10 | 1.25 |
| Working class (pedagogy) | 8 | 9 | 1.13 | 4 | 0.5 |
| Working class (locale) | 6 | 3 | 0.50 | 1 | 0.17 |

*Table 10.5: Summary of mathematics content scores*

It is notable that all except three of the middle class parents identify the task as being to do with the measurement of area. Where scores are relatively low, in all except two cases (Chapman and Powell) this is due to the immediate identification of the task as to be about the measurement of area. Amongst the working class pedagogy oriented group, five of the eight identify the task as being to do with measurement. Three of these interviewees specialise this to the measurement of area. By contrast, none of the interviewees in the locale oriented group relate the task to measurement.

This analysis of the descriptions of the mathematical potential of the task gives an indication of a patterning of the readings of the interviewees which is consistent with the analysis of other aspects of the data. Few of the parents produce descriptions which approach the level of detail of those of the teachers. Four out of the five that do are in

the middle class discourse oriented group. None of this group can equal the teachers in terms of the identification of the more specialised areas of school mathematics. The majority of middle class parents do, however, identify the main mathematical focus of the task. The difference between the discourse and pedagogy oriented groups appears to be in the identification of the wider school mathematics potential of the task. Amongst the working class parents, whilst those with some classroom experience are better placed than the others to be able to identify the general focus of the task, only one (Rawlings) takes a wider view of the potential of the task. Five of the working class parents do not relate the task to any of the areas of school mathematics.

#### *10.4.1.2 Form of the account*

In contrast to the accounts given by the teachers, few parent accounts draw on the school curriculum as a resource. Thus, although some of the parents area able to draw on their mathematical knowledge to describe the potential of the task, they are not in a position to place this in a curricularised sequence. Similarly, limitations are placed on them in terms of relating the task to children of different ages and levels of attainment. Their reference points are, unless they have classroom experience over an extended period of time, their own children and, perhaps, the children of friends and relatives. Tom Barton illustrates this mix of generalised mathematical knowledge and localised experience in the opening section of his account:

> Let's have a look. I can see the benefit in that. I can see the point of that and I also see that it is something that could interest the kids. First of all because it's got money in and money's exciting per se. But I also think they would get the point of. [And what would you think the mathematics in there would be?] I think it's trying to calculate the kind of volume. Calculate the size of an area. Whether it's trying to get through the concept of an area which isn't square or triangle like that. Whether it is the concept of an irregular area, I'm not sure. But I think the concept of an area is a reasonable one and I think that's fairly valid in mathematical terms.

Other accounts by middle class discourse oriented parents resemble this with respect to the mix of local concerns and more general school mathematics. Helen Winters states that:

> Well it's nice and easy to do because most of us have got pennies or something and it's a sort of area type thing isn't it. You know, how many pennies can I fit in a hand. So you're looking at fitting shapes and I think that would be alright. That would be interesting. Yeah, anybody can manage it you can count up your pennies and you can have an interesting discussion whether a two p is twice as big as a penny then.

Of the middle class discourse oriented parents, Heather Powell and Ian Chapman give the least developed account of this task in mathematical terms. In both cases they adopted a critical stance with respect to the task. Both did, however, identify the principal mathematical focus of the task.

The accounts of the pedagogy oriented parents were similar in form, though not as extensive, on average, in terms of indexing of mathematical content. For example, Louise Burbidge stated that 'I would guess, suppose it could be two things really, things to do with area sizes and getting a relative, smaller than, bigger than'. The responses of other members of this group are similar in form and content. Caroline Greenaway gives the most precise response in terms of school mathematics:

> Ah, right, well I suppose counting and the value of the coins, area and how you might describe area. Em. How much care you have to take trying to fit things in. I think that's it.

Kate Murray is the only member of this group who expresses any uncertainty. She initially says the task is about 'capacity' but then goes on to say 'Well, only sort of comparing sizes of things, not so much, I don't really see the point of this, um, but comparing sizes maybe'. Like the other members of the group she goes on to consider how the form and content of the task relates to the skills and dispositions of her children and considers the extent to which the task is appropriate for them. In some cases, parents suggest pedagogic adaptations of the task. For instance, Emma Kirkwood suggests

> I suppose it's about measuring area. It should be good fun for a child to do rather than, you know, sort of try to sort of, I don't know, draw it on square paper and count it as squares, or something, it's more fun to do it this way.

The accounts of the working class locale oriented group are notable in that, in most cases, the perceived value of the task lies in the act of carrying out the task, rather than in the acquisition of particular skills or concepts through engagement with the task. Thus, the value of doing the task is presented as helping the child to carry out similar tasks. For instance, Janet Woods responded to being ask what she thought the task was designed to teach said 'using pennies and how many pennies it takes, I suppose, and it would mount up to say if you'd used fifteen pennies, mount up to fifteen p'. Similarly, Vicky Bremner says:

> All you can really tell from there is how many pennies like go in your hand, it doesn't actually say, but there's, I know it says how much is your hand worth but it's not really telling you a lot.

Sharon Baker observes 'just money again init, really, amount of money and things'. In this group no comments are made about pedagogic adaptations of the task, nor are statements made about the task which indicate that the value of the task is contingent upon the mathematical skills and knowledge of the child.

All except one of the pedagogy oriented working class parents identify some aspect of the task with the school mathematics curriculum. The most comprehensive of the accounts is given by Julie Rawlings, who acknowledges that she is able to draw on her experience of working with pre-school children in a local authority day-care centre in reading the tasks that come home. In common with the other members of this group she moves from mathematical analysis of the task to consideration of the potential of the task to engage and motivate her child:

> About area. The area of things. And how much it can take, how much space there is. But he's not really interested, didn't seem very interested in it last night. Always know when he's not interested, he just sits there. And that's it. You always know when he's bored. Of something. And he doesn't want to carry on with it. He'll just go off into his own things.

> But some () he just didn't want to stop. Like the teapot measure, he just didn't want to stop doing that

This reflection on the form of the task in relation to the mode of the child's engagement with it is a distinctive feature of the accounts of members of this group. Joan Patrick relates the task to the more general experience of the children:

> Um, well, just, you know, if you come up to 25p, realising you know like how much 25 pennies on the you know what sort of an area it covers. Cos a lot of children wouldn't actually see 25 1p's but to see it actually you know on a graph like that, in a picture like that. Yeah, cover an area with it. That's quite good.

Similarly, Debbie Peters makes more general observations about the pedagogic form of the task.

> All this is really working through play. Especially for the little ones, you know infants, they actually don't realise when it says draw round your hand and put some pennies on it to find out how wide it is. They just think it's a game. They don't actually realise it's maths in their head it's just a game. I think this is where they actually pick it up a lot quicker because it's made into a game.

The one mother in this group who does not identify the task with any specific area(s) of school mathematics, Mary Gibson, moves from the apparent pointlessness of the task to mark out her more general difficulty with making sense of IMPACT tasks and her critical opinion of IMPACT

> Not a lot no. I mean a lot of it I mean I've had to go over it several times so there's one she brought home that actually had a mistake on it and it was a spelling mistake. Now I picked it up and so did she because she was reading it and it got so far through and it didn't make sense. And she went over it and over it and then she realised it was because the word was wrong. They spelt it wrong. So that's way she couldn't make head not tail of what she was supposed to be doing. But as a general rule, we don't like them.

Unlike the members of the locale oriented group, all the working class parents with classroom experience move away from the specifics of the task to address either the mathematical content or the more general pedagogical features of the task. Unlike the middle class parents, they are, in the main, less likely to identify, in detail, the mathematical potential of the task.

### 10.4.2 MODES OF ENGAGEMENT WITH IMPACT TASKS

In section 8.5.3, I described six categories for the classification of parental modes of engagement with IMPACT tasks, based on the statements made by teachers and parents. Only one of these modes of engagement (*collaborator*) was evaluated in unambiguously positive terms by the teachers. In discussing the accounts given by parents of their mode of engagement with IMPACT tasks, I will make reference to these categories.

Amongst the middle class parents, the *instructor* mode is dominant. In this mode, the parent adopts an explicit form of pedagogy, that is they make some attempt to teach the child or to instruct them in the completion of the task. Adoption of this mode of engagement also entails some assessment of the child in order to construct appropriate pedagogic strategies. Only Elisabeth Howells appears to adopt another mode of engagement—predominantly, in this case, *monitor* mode with occasional demonstration to compensate for perceived inadequacies in the presentation of the IMPACT activities. This is related to her critical stance with regard to IMPACT. She states that:

> if they were easier to understand then, you know, she could sit down and say this is what we've got to do and she could tell me what we'd got to do and I could just steer her instead of you know having to read it and tell her what to do.

Three of the parents (Heather Powell, Ian Chapman and Helen Winters—all members of the discourse oriented group) appear to vary the manner in which they engage with the task according to the nature of the task and the age and characteristics of the child with whom they are working. For instance, the oldest of the Chapman's children has experienced difficulties with school mathematics. They state that they sometimes become frustrated at their lack of success as instructors and switch to the *demonstrator* mode when working with him. This is illustrated in the following account of one activity given by Ian Chapman:

I seem to remember her having to cut paper up and I was trying to explain why it was thirteen and um, not twelve or something like that and getting a little bit impatient. I have a wont to do that. Um, and it round, you've got rounding up here. You've got effectively um long division. You may even have proportion. Um, so I can see that it's introducing you to it. But without the explicit result at the end that you, therefore you have achieved … Er, I'm thinking that if I've got 132, it's, a square for every ten, so you're going to get the answer thirteen, but that's guided you to get one that was thirteen. Would you have thought to have divided it by ten to get it?

As with the quote from Elisabeth Howells, this shows some degree of frustration with the characteristics of the task, and the child, which require the parent to shift away from their preferred form of engagement with the task.

Helen Winters also varies the manner in which she engages with the task. She observes:

> Well sometimes she does them all on her own. She says I've done 'em. Sometimes we do it together. It will depend on what there is. I think actually she's getting to the age where it's much harder to sit down with her and do things, she's a bit older. The younger one quite likes you to do IMPACT with her and she's seven.

She also states that:

> It depends how simple it is. Depends, I mean if it's something like this you sort of need two people. One or two other things have been fairly simple for either of them. They're both fairly bright and so they sort of sit down and they do it ten minutes and you say have you got any IMPACT and they say I've done it. And then you have to find out what they've done.

It is clear from the accounts of the middle class parents that they are aware that they are supposed to work with the child on the task, though as I have already observed, they seem mostly to put themselves in the position of instructor rather than collaborator. Where the child has carried out the task by themselves this is legitimised by making positive reference to their ability or motivation, whilst recognising that this is not the way it is supposed to be done. For instance, Heather Powell states that:

> Well this was actually quite interesting. I mean sometimes, especially Tom, he's nine now, he'll bring them home and easy peasy, you know, and he'll just scribble it off and come on now James lets have a look at that and he doesn't want to share it, all of this, parental co-operation. This one he found he wasn't quite sure what he was supposed to do which gave more leeway to actually put in some input oneself and that was quite nice.

And with reference to her daughter, she says that:

> I dig it out of her bag later and have a look and it's really strange because she's capable of doing it on her own, she does it on her own and that's it. Not having me interfering. Big grown up girl at five for gods sake.

Amongst the working class parents, the demonstrator mode is dominant, though there is wider variation within this group. In *demonstrator* mode, parents show, or model, how things are done, or take over the activity and do it themselves. In this form of modelling, it is not necessary to work from an initial assessment of the child. The judgements made are more likely to be of the immediate characteristics of the child's engagement with the task (e.g. whether they are concentrating, whether they are enjoying the activity, whether they are following what is being shown or done). In the accounts given by these parents, they often put themselves in the position of demonstrator to get the child started on the task and, if there is difficulty in doing the task, they finish it off for them. This is illustrated by the following account by Joanna Geary.

> I had to draw one of them for him because he wasn't quite sure what he was supposed to be doing with it. I'd explained it all to him that, you know, this is the front of the car, that's was they call, you know, but he didn't seem to grasp really what he was supposed to do even though it had been explained to him. It still took a while for him to sink in. Having the drawing side of it, it was quite difficult, I mean the car wasn't the simplest car, he chose the car, and er, I was saying well just draw, you know, a couple of headlights and this and then, no no it's not like that though, you know, and I think he was more frustrated that he couldn't draw what he wanted to. It was quite hard for him that one. I mean I had to draw something next to it to show what it actually resembled because he, he did get frustrated with it.

In her account of another task, she illustrates the switch between non-pedagogic modes (managing and observing the task) and demonstrator mode.

> I try to get him to do as much as he can. We had one where you had to draw round your foot and then cut it out. Well we nearly lost the toes on a couple of them. So he cut as much as he could out without loosing bits and I'd just finish it off for him. But he does do most of them on his own. I just sit and watch. And if he does start I'm not going to then, you know, that's when it gets …

All the parents in the pedagogy oriented group either place themselves in demonstrator mode or as switching between demonstrator and non-pedagogic modes. The focus is largely on the completion of the task.

Of the locale oriented group of parents, two (Vicky Bremner and Janet Woods) place themselves predominantly in *non-pedagogic* mode. Janet Woods' accounts focus exclusively on attempts, often unsuccessful, to get her children to do the tasks. For instance:

> I'll be quite honest with you, her IMPACT folder is at home in the drawer and I keep giving it her and saying come on Michele we've got to do this but she says no I've got to do something else and she'll make out she's got homework to do or something. I just can't force her. She's very, erm, I can't force her.

Vicky Bremner also focuses on getting her son to concentrate on the task and relates this to her own feelings of discomfort with the tasks. For example:

> I have to ask him a couple of times like to er concentrate. I think that was, that was one. You see it's a lot different from when we used to go to school you see a hell of a lot different (laughs)

Apart from the regulation of the task, her interventions relate to her son's difficulty with reading. She says:

> I have to sit down because he's not very good at reading. He is a lot better now since last September because his reading's improved. But he couldn't sit down and you know, he couldn't read it and tell me what he's actually got to do I've got to sit down and tell him.

Of all the parents in the sample, only Sharon Baker could be seen to adopt the position of collaborator. She presents herself as doing the task alongside her children. From what she says, and from the comments she makes in the IMPACT diary, it can be seen that she adopts this mode of engagement less as a deliberate selection of a mode of pedagogy, than as a result of feelings of lack of expertise to contribute to the accomplishment of the task. For instance, she states that:

> She come to me with it and asked me to help her and we both sat down on the settee together and she was showing me what to do because I didn't know what I was doing you

> see. Because I'm not very good with me maths. And she managed to do it, you know. I mean I had a go and I couldn't do it

In relation to another task, in an area in which she feels more confident, she states that:

> She brought one home that was practical, where you had to make something and you had to like, em, like get 5 or 6 things in the room that were about the same weight and then draw em and things. Well I happened to be there because I can do the practical ones and I help her with em, I don't do them for her, we both do em and she'll draw em and colour them and everything and then she'll read out what she's done and then I'll look at it to see whether she's done it right and we just do it like that really, you know, we just help each other out.

The other three parents in this group all switched between demonstrator and monitor pedagogic modes and non-pedagogic modes. Both Angie House and Alison Stuart were critical of the tasks. Angie House related her mode of engagement to inadequacies in the tasks or not being able to see the value of the task:

> We played something and you know, they understood that uh, five 2ps came to 10p and we got there. We taught what I think the object of that one was which was teaching money values. But as with, I could have done that with anything at home. I didn't need this homework come home to help me do that because that one just didn't make sense.

Of another task, she says:

> They enjoyed that they got on with it.. Um, I'm not exactly sure what that learned. You know, it's fun for them to guess and find out how far out they were with their guess. Um, a nice messy one again.

The Paice's also switched between modes according to the features of the task. Although they felt generally positively about IMPACT, they, too, expressed some difficulty in determining what they were supposed to do with some of the tasks. For example, Ann Paice says of one task:

> Very difficult, well, we, you, you sort of read it and then you read it again trying to decipher how to play the game and then, What () was it um, which, oh, depending on which game your playing your playing, I mean it only gives you the one example anyway but um, I think we got it in the end though didn't we Trev?

In summary, it can be seen that there are distinct differences between the groups in the descriptions they give of their mode of engagement with the IMPACT tasks.

Amongst the middle class groups, the instructor mode dominates. This is consistent with an explicit pedagogic relation. Amongst the working class parents, it is the demonstrator mode that dominates. This is based on exemplification and modelling and is consistent with a tacit pedagogic relation. Within both social class groups there appears to be some switching between modes: between instructor and demonstrator amongst the middle class parents and between instructor, monitor and non-pedagogic modes amongst the working class parents. For three members of the discourse oriented middle class group, there is clear evidence in their accounts of switching between modes in response to the nature of the task and the characteristics of the child. The parents who indicate that they adopt predominantly non-pedagogic modes are in the locale oriented working class group. The one person who, from their account, would be classified as working in predominantly in collaborator mode (the mode viewed most favourably by the teachers), Sharon Baker, is also in this group. She is by far the least mathematically confident of the parents interviewed and appears, from her account, to be working collaboratively with her children through a genuine sense of wishing to learn alongside them. Of all the parents, she has least contact with the school and uses the diary to communicate what she feels to be her lack of understanding of school mathematics.

## 10.5 Conclusion

In the first section of this chapter, the consideration of the conditions of realisation of IMPACT within the home, including availability of time, space and material resources, shows little variation within and between the middle class and working class group. As this is the one aspect of social class variation that does receive attention in the IMPACT literature, the neglect by the project of consideration of differences in discursive resources and in orientation to official pedagogic practice is thrown into sharp relief.

Greater variation is apparent in parents' orientation to official pedagogic practice, which I have investigated by considering differences in parents' confidence in approaching IMPACT tasks, their level of enthusiasm for IMPACT and the relationship between official and local pedagogic practices in the home. The latter, in particular, reveals distinct differences between the groups. In broad terms, the discourse oriented middle class group tend towards direct teaching and assessment of their children using workbooks whereas the teaching of mathematics within the home was more likely to be embedded within everyday and domestic activities by members of the pedagogy oriented group. The latter is closer to the ideal projected by the schools, for instance in the booklets analysed in Chapter 5, although these parents are incorporating an element of explicit teaching into these activities. The practices of the majority of the pedagogy oriented working class group come closer still to the image presented in the booklets. Here school mathematics is seen as inherent in the activities themselves, although the mathematical possibilities to which they refer are limited in scope (i.e. mainly counting). Members of the locale oriented working class group also make reference to everyday activities, such as shopping. Here, however, the activity is not being identified for its potential for the development of more general mathematical skills or understandings, but as a context for the development of the skills that are and will be deployed in these settings. Shopping thus provides a context within which to develop the mathematical skills used in shopping. The two groups who appear to be most alienated from the ideal projected by the school are the discourse oriented middle class parents, whose local pedagogic practices are exemplified by a highly explicit, disembedded form of pedagogy (associated with highly structured, vertical discourses) and the locale oriented working class parents, whose local pedagogic practices tend towards the tacit, highly context specific forms of pedagogy associated with segmental horizontal discourses.

The final section of the chapter deals with the manner in which parents read tasks and how tasks are realised. To explore the former, I have compared parents' readings of

the task given to all interviewees to discuss—'How much is your hand worth?' In terms of identification of the mathematical potential of the task, none of the interviewees produce descriptions as detailed as those of the teachers. The discourse oriented middle class group produce the most detailed analysis, followed, in order, by the pedagogy oriented group, the pedagogy oriented working class group and the locale oriented working class group. The form of the accounts of some of the members of the latter group are notable in that they relate pedagogic potential of the task directly to the features of the task itself, i.e. doing the task teaches you to do the things that you do in doing the task. This relates closely to the tacit forms of local pedagogic practice, with its stress on modelling and exemplification, adopted by this group, noted above. Members of the pedagogy oriented group, in contrast, move away from the specifics of the task and identify some elements of the more general pedagogic or mathematical potential of the task.

Differences in the form of realisation of tasks are explored by analysing those parts of the interview where the interviewees describe how they operationalised the particular IMPACT tasks they had carried out with their children. Drawing on the teacher interviews, I classified the modes of engagement of parents from their accounts. Once again there were differences between the groups. The middle class group tended towards the instructor mode, whereas the working class group tend more to the demonstrator and non-pedagogic modes.

The analysis presented in this chapter highlights the centrality of social class and pedagogic biography in understanding differences in orientation to official pedagogic practice and the realisation of school mathematics tasks in the home. The mode of explanation offered stresses processes and begins to give some texture and dynamism to what could be considered, within another framework, as no more than relatively static 'pedagogic capital'. In addition, the analysis begins to give some substance to what might be considered 'pedagogic habitus' and demonstrate the relationship between this

and differences in forms of pedagogic practice. The analysis presented in the following chapter takes the issues explored here further by moving to the level of semantic selection. Here, distinctions will be made between individuals and groups in terms of the selections they make in describing and analysing IMPACT tasks and hence their semantic repertoire. This is achieved through the further refinement and application of the networks developed in the analysis of the IMPACT diaries (described in Chapter 6).

# Chapter 11 Midbury parents III—semantic orientation

## 11.1 General approach to analysis

The use of networks in the analysis of accounts given by the interviewees enables the distribution of different types of statements to be mapped (differing both in the focus of the statement and the form of the statement made). The complete set of the types of statements made gives an indication of the total semantic reservoir (i.e. 'what can be said', inferred from 'what is said') from which the repertoires of the individual parents ('what they can say', inferred from 'what they do say') are drawn. By profiling the individual repertoires of the parents a more systematic comparison can be made between the pedagogic orientation and positioning with respect to the school of parents from different social classes. Comparisons can also be made between groups within these social classes.

Whereas the focus of the previous two chapters has been on the social characteristics of the sample, their stated pedagogic practices and their orientations to schooling, the focus here is on the semantic universe within which they operate and the choices they make in the construction of legitimate statements within the context of the interview. This in turn enables me to begin to explain in a more precise manner the relationship between social class and forms of parental engagement in school mathematics tasks within the home.

The networks developed and the description of the distinctions made are included in the main text of this chapter (rather than given as an Appendix) because an understanding of the networks is integral to the presentation of results and the subsequent discussion.

## 11.2 The sample

The analysis presented here focuses on the parents' reading of tasks and their accounts of the realisation of the IMPACT tasks. The relevant sections of all 28 of the parent interviews are analysed. Detailed coding is carried out on the responses given to Questions 1.2 and 1.3 in the parent interview guide. Question 1.2 asks the parent to give an account of how they carried out a particular task and Question 1.3 asks them to reflect on what they think the task is designed to teach. These questions were asked for all the tasks discussed in the teacher interviews that the parents recall carrying out with their children. The minimum number of tasks discussed in this manner with a parent was two, the maximum was six (with a parent who had children in both the relevant classes and was thus able to discuss all the activities collected from that school). A total of 81 task accounts were analysed.

## 11.3 The adaptation of the diary coding network

The network used is based on the one developed in the analysis of the IMPACT diaries. The diaries serve a specific purpose within the IMPACT process and constitute a distinctive context for the production of statements that act to relay information from the home to the school. The network developed for the analysis of the comments made in the diaries enables us to address systematically both the content and form of these communications. Information is relayed regarding the competence and/or disposition of the acquirer and/or about the realisation and/or evaluation of the task. The network also allows us to describe the form the comments take in terms of their dependence or independence from the process of realisation of the task and the extent to which reference to school mathematics is made. The interviews, in contrast, lie outside the IMPACT process and are designed to explore specific issues with parents and to elicit

accounts focusing on the realisation and analysis of IMPACT tasks. Rather than a personal written communication between parent and teacher, the interview calls on the interviewee to reflect on and discuss their practice in interaction with a researcher who is initially unknown to them and who has a specific agenda. These differences in the nature of the context within which statements are produced demand that I adapt the network and the manner in which it is used in analysis. In this context, the network enables us to examine (i) differences in *form* of the statements made, in particular the distribution of task dependant and task independent statements in the interviewees' accounts of their own practice (ii) differences in the *focus* of the statements made, for instance the distribution of task evaluation and task realisation statements.

Two initial adaptations were made to the network and its use in the analysis of the interview transcripts.

(i) There are clear differences between written and spoken forms of statement. In order to ensure maximum reliability in coding the statements, the network was used in a 'pilot' analysis of sections of the interview transcripts. Following this, the descriptions of the categories were revised and examples from the interview transcripts used to illustrate each category. These are given in Section 11.6 below.

(ii) In the analysis of the diaries, no distinction was made between those *task independent* statements which were *mathematical* in nature and those which were not. In piloting the use of the networks to code extracts from the interviews, it became apparent that some *task independent* statements clearly indexed areas of school mathematics whilst others did not make any direct reference to school mathematics. This distinction is of particular importance in exploration of differences in the use of mathematical resources in the accounts of the sub-groups of parents within the sample.

The network subsystems were modified to allow the distinction to be made between *task independent mathematical* and *non-mathematical* statements.

The process of coding is concerned with the recognition of theoretically relevant meanings. If there is difficulty in coding a particular semantic unit (see Section 11.4), an attempt is made to clarify the category descriptions and, if necessary, a rule is written to enable statements of this kind to be coded. If there are persistent problems with the categorisation of particular kinds of statements then changes need to be made to the network and/or descriptions of the categories. The initial piloting of the network was carried out on randomly selected sections from the relevant sections of the parent interviews. Once the network became sufficiently stable to enable several task accounts to be coded without any clarification or adjustments being made, the final coding of was carried out using the network in this form. All the material coded prior to the establishment of the stability of the network was re-coded with the stable network.

## 11.4 The coding unit

The network is used to code systematically individual statements within the accounts given by the interviewees. As a comparison between accounts is being made, it is important that the unit to be coded is clearly defined and that there is consistency and rigour in the identification of units. It is not appropriate to use formal linguistic criteria in doing this as we are not engaged in a linguistic analysis but rather we are concerned with specialised meanings which are realised linguistically. Our unit is therefore semantic and is recognised with direct reference to the networks. As segments of specialised meaning are unlikely to be realised below the level of the clause, the clause is taken as the starting point for identification of each segment to be coded. In all cases it

is necessary to look at the context within which the clause appears. If the following two conditions are met the clause can be taken as a segment of specialised meaning and coded: (i) it has meaning in terms of the categories of the network and can be coded unambiguously; (ii) there are no contextual features that would suggest an alternative interpretation. If the first of these conditions is not satisfied then the clause will be part of a larger unit of meaning. It is necessary to increase the amount of text to be coded by including additional clauses until the two conditions are satisfied. If the second condition is not satisfied, then it is necessary to take account of the context of the statement in deciding how best to code it. The text being ascribed a code may vary between a single clause and more complex sequence of clauses extending beyond a single sentence. As we are dealing with transcribed speech, the use of the sentence as a limit to the coding unit would not be appropriate.

Speech in an interactional setting often contains a degree of repetition that does not make any obvious contribution to meaning (though this form of repetition may, of course, be of interest in other forms of analysis). One interviewee says, for instance, 'I had to make a ruler, I did a ruler for her'. Following the guidelines for the identification of a coding unit, this utterance could be read and coded as two statements For the purposes of this study it was decided to treat consecutive repetitions where, in terms of the coding network being used, there are no differences in meaning, as one unit and thus to ascribe just one code, even though, under the rules for coding set up, these would constitute two codable statements.

## 11.5 Reliability of the networks

The networks enable the accounts given by the interviewees to be read in terms of semantic selection. This enables the analyst both to produce a commentary on these accounts in narrative form and, through the process of coding and counting segments of

coded text, to make comparisons in quantitative terms. The detailed description of the networks given in this chapter represents an attempt to make the process of analysis as explicit as possible.

In the development of the networks I have effectively created a language for the translation of the enacted meanings (the statements made by the interviewees) into theoretically meaningful terms. The key elements of the language are defined and are organised in a manner that represents the production of an account as a series of semantic choices. It has to be stressed that this is not an attempt to model the production of the interviewees' accounts, but to read their accounts into our theoretical structure, to move between the empirical and the theoretical. Whilst it is necessary to make this process explicit, it is not sufficient. I have to demonstrate the reliability of the process of translation which in turn entails that I have to demonstrate that the language is not only coherent but can be learnt and used by others in reading the data. The complexity of both the language and of the accounts being analysed requires that we go beyond commonly used procedures for the establishment of inter-coder reliability used in, for instance, the use of systematic observation schedules (see, for example, Croll, 1986) or the quantitative content analysis of texts (see, for example, Berelson, 1952). In these cases coders are given a set of rules and some statements to code. The reliability of the coding framework is then judged by the degree of agreement between coders.

The testing of the networks took the form of the socialisation of another person into the use of the language. The aim of this was to develop a 'feel' for the language and examine the extent to which another person could employ the networks in the description of extracts from the transcripts. Thus, in order to establish that the language developed here can be learnt and used consistently, I taught a colleague to use of the networks and to act as a second coder. I then tested the extent to which we agreed in the independent coding of sections drawn from the interview transcripts. The procedure for this was as follows:

(i) The networks were introduced and discussed. Definitions of the categories were given with examples. In addition, portions of the transcripts were taken and the process of coding was demonstrated.

(ii) The second coder was given an extract from the transcripts and asked to mark out each parts of the text which she considered could be coded using the networks. This was then compared with my own division of the text into codable units. There was just one difference—I split one section of the text into three codable units, whereas the second coder split this section into two units. Following discussion, the procedure was repeated with another extract from the transcripts. Again, differences in the way in which the text was divided into units was discussed. The identification and discussion of codable units in these two extracts from the transcripts (a total of 27 units) constituted the training stage for the identification of codable units.

(iii) To test acquisition of the facility to *recognise* codable units, a third extract from the transcripts was given to the second coder. There was 100% agreement in the independent marking of codable units between the second coder and myself.

(iv) A similar procedure was adopted for the *coding* of statements drawn from the transcripts. Fifteen statements within the transcripts were identified for the second coder to code. Following this, her coding and my own were compared and differences discussed. This was repeated with another 15 statements. Each code requires a selection to be made at four stages within the network. In the training phase, the level of agreement between us was 88.3% (106 out of 120 selections). The sections for coding of the text were chosen to represent the widest possible range of statements. The statements

were presented in the context in which they occurred—this was found to help make decisions about the task independence/dependence of the statements.

(v) To test acquisition of the facility to *code* units of the transcript, a further 15 statements from the transcripts were given to the second coder. There was 91.7% agreement in the independent coding between the second coder and myself.

## 11.6 Parental accounts the realisation of IMPACT tasks

### 11.6.1 The structure of the network

The coding network is divided into four subsystems, each of which has a similar structure. Two subsystems are used to describe statements that focus on the acquirer (the *acquirer competence* subsystem and the *acquirer disposition* subsystem) and two to describe statements that focus on the task (the *task realisation* subsystem and the *task evaluation* subsystem). Within each subsystem the following distinctions are made with respect to the form of each statement.

(i) *Task dependent* statements are distinguished from *task independent* statements. *Task dependent* statements relate directly to the particular task being discussed, either in general, unspecific terms (e.g. 'she liked it') or with reference to some specific aspect of the task (e.g. 'she enjoyed adding the numbers together'). *Task independent* statements extend beyond the immediate context of the realisation of the task and the child's engagement in the task and, say, address a particular class of tasks (e.g. 'addition activities with money are always more interesting') or the child's

competence or disposition in generalised terms (e.g. 'she likes activities with money').

(ii) Two forms of *task dependent* statements are identified: *specific* and *unspecific*. A *specific* statement refers directly to an aspect of the task in a manner that goes beyond the operational features of the task (e.g. 'we had to break the numbers into tens and units'). This involves more than recounting a sequence of events or making a general observation about a particular task. Whilst these kinds of statements relate directly to the task, they do include either an element of analysis or they give some detail on the basis for an evaluation or the specific competence or disposition being addressed or the pedagogic process of task realisation. *Unspecific* statements, in contrast, are highly context dependent and, in terms of the task being described, non-analytic and procedural in nature (e.g. 'we took the counter and put it on that square'). In some cases it is necessary to refer back to the form in which the task was set (by looking at the sheet sent home by the teacher and the teacher's commentary on the task) in order to make this judgement.

(iii) *Specific* statements are divided into *mathematical* and *non-mathematical* statements. *Mathematical* statements are those that make explicit reference to school mathematics (e.g. 'he measured the areas of the shapes without any problem). *Non-mathematical* statements are those that make specific reference to other areas of the curriculum, or to more general operations, skills or knowledge (e.g. 'it was difficult for him to cut the letters out properly'). This distinction is not always easy to make as the primary school mathematics curriculum, particularly at Key Stage One, covers a number of what might be considered everyday skills, such as telling the

time. In cases where there are difficulties coding these statements account is taken of the teacher's analysis of the task and the formal content of the primary mathematics curriculum as stated in the National Curriculum for mathematics.

(iv) *Task independent* statements are also, for the purposes of this analysis, divided into *mathematical* and *non-mathematical* statements. The former make direct reference to a specific acquisition or realisation of school mathematics (e.g. 'she knows all her multiplication tables'), the latter do not (e.g. 'she is very good at reading'). In distinguishing between *mathematical* and *non-mathematical task independent* statements the points raised above regarding forms of *specific* statements also have to be taken into account.

(v) A distinction is made between *positive* and *negative* statements. *Acquirer focused* statements contain an element of evaluation of the child in that they state what the child has or has not done, can or cannot do, likes or dislikes and so on. Those statements that project a positive image of the child (in terms of their competence or disposition, in task dependent or task independent form) are coded as *positive*. Those which index things that the child had difficulty with, is not able to do, does not like and so on are coded as *negative*. Task evaluation statements can also be coded in this way by determining whether a positive or negative evaluation of the task has been made. Coding task realisation statements as positive or negative is more difficult in that they report the process of doing the task. In cases where an unresolved difficulty in the realisation of a task (or class of tasks) is described (e.g. 'we were unable to find collections of objects for all the numbers over five'), the statement is coded as *negative*. When

statements are made that either demonstrate the resolution of a difficulty or describe the manner in which the task was successfully realised (in the parent's terms) are coded as *positive* (e.g. 'we rolled out the newspaper on the floor and he drew round me'). Such judgements sometimes require contextual information to be taken into account. Examples of both positive and negative statements, taken from the interviews, are given in each of the sections detailing the sub-networks.

In the following four sections, detailed descriptions of each subsystem is given with examples from the interviews. If no examples are given for a particular category of comments, this is because no comments of this kind were made in the interviews (e.g. none of the interviewees made negative task independent acquirer competence focused statements that index school mathematics).

### 11.6.2 ACQUIRER FOCUSED STATEMENTS

The statements that focus on the *acquirer* (predominantly, though not exclusively, the child in this study) are divided into those which focus on the *competence* of the child (i.e. what the child is judged by the parent to have done or not done, be able to do or not able to do, know or not know) and those which focus on the *disposition* of the child (i.e. on what the child likes or does not like, will do or not do, is like or is not like). The former statements are thus concerned with the parents' judgements of the child in terms of cognitive and sensory-motor skills whilst the latter concern behavioural, emotional and motivational characteristics of the child.

Not all the statements that mention the child are classified as acquirer focused. In some cases the child is mentioned in making an evaluative statement about the task. For example, Tom Barton states, with reference to his son, that 'he found it quite tedious to cut out the drawings' but adds that 'because in essence it's a lot of cutting out'. In total

this constitutes an evaluation of the task, there was too much cutting out to do. His child's performance is presented here as both as an outcome and thus as evidence for the judgement. He goes on to state 'so he did need a lot of, a lot of help there'. Thus, because there was a lot of cutting out to be done the child needed help. A negative feature of the form of the realisation of the task (that the child needed a lot of help) is related to the a particular negative feature of the task (it required a lot of cutting out). In the end the parent takes what they view as appropriate action (they help the child) but that they recognise is not ideal (needing help to complete a task reflects badly on the child).

#### *11.6.2.1 Competence*

Given below are descriptions of each of the subcategories of the competence network (see Figure 11.1) with examples.

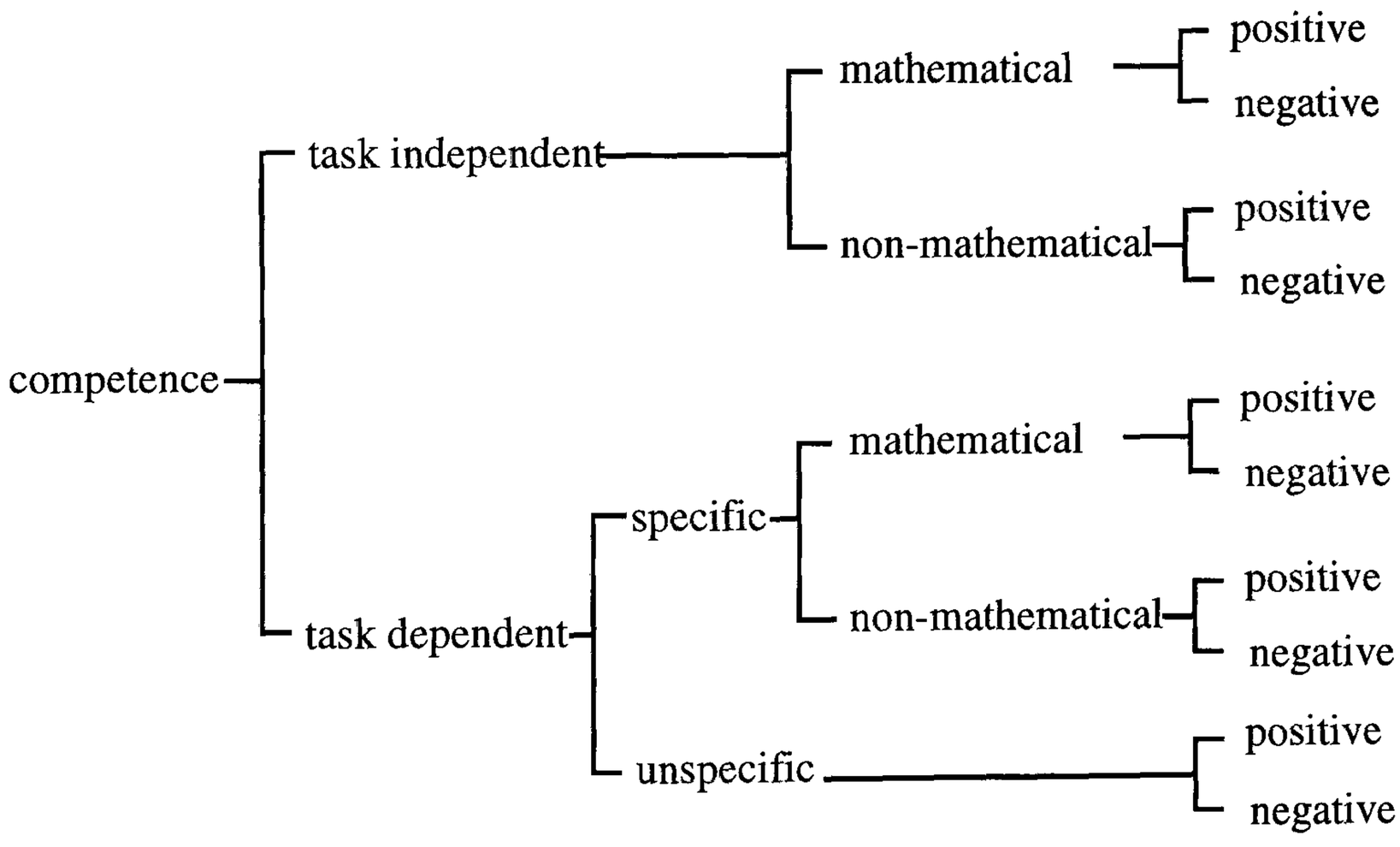


*Figure 11.1: The acquirer competence subsystem*

*Task independent* statements address the competence of the child in a generalised manner, i.e. they make no reference to the realisation of the task or to any specific

feature of the task. They make assertions about the competence of the acquirer that go beyond the immediate context of the task being discussed and can be understood without reference to the task or its realisation. In this way they constitute an assessment of the competence of the child. The parent is, on the basis of the child's performance on the task being discussed or from prior experience, making a judgement about the child and communicating that judgement. This is may be in the context of a justification for the form of the child's engagement in a task (e.g. 'she knows her tables so ...') or to explain the outcome of a task (e.g. ... because she knows her tables'). These statements can be either index a particular area of the mathematics curriculum or refer to areas of competence that are not specifically related to school mathematics. This distinction was introduced for the analysis of the interviews in order to examine the manner in which the mathematical knowledge of parents operates in the description of the realisation of tasks. Examples of each type of task independent acquirer competence statement are given below.

Mathematical

- So they knew what prime and even numbers was. But again, I mean, she knew that already really (positive).

Non-mathematical

- ... normally they know exactly what they've got to do (positive).
- Katie can't read very well, you see (negative).

*Task dependent* statements either make direct reference to one or more features of the task or are made in such a way that they cannot be understood independently of the task and its realisation. For example, the statement 'he managed to catch on fairly quickly that we were looking at sets, basically, or different groups of things', specifically mentions how the child performed on a particular part of the task. It is a *positive* statement in that it expresses a favourable judgement of the competence of the child ('he managed to catch on fairly quickly'). This statement would be classified as a *specific*

statement as it indexes a particular understanding that the child has demonstrated. In this example it is a mathematical skill so this would be classified as a *mathematical specific task dependent* statement. The statement 'he worked out that, you know, you turn right at the end of our road, you turn left into her road' is also specific, but this time it refers to a non-mathematical operation and would thus be classified as *a non-mathematical specific task dependent* statement. Some of the statements about the competence of the child in the realisation of the task do not make reference to specific mathematical or non-mathematical strategies, knowledge, skills or operations. These statements, such as 'John was good at this' , are categorised as *unspecific*. Examples of these different forms of task dependent statements are given below.

Specific

Mathematical

- she knew after she'd tested out those two numbers (positive).
- when she first read through it she didn't seem to understand that she was drawing to scale (negative).

Non-mathematical

- that was something after we'd done it that she could do the rubbings on her own. Do them all different colours and things like that (positive).
- she still wrote them down in the wrong order (negative).

Unspecific

- she grasped that straight away (positive).
- he wasn't quite sure what he was supposed to be doing with it (negative).

### *11.6.2.2 Acquirer disposition*

The distinctions made above (task independence/dependence, mathematical/non-mathematical, specific/unspecific, positive/negative) are also made when classifying acquirer disposition comments. These comments focus on what the child likes or does not like, will do or not do, is like or is not like. The resulting sub-network is given in Figure 11.2 below.

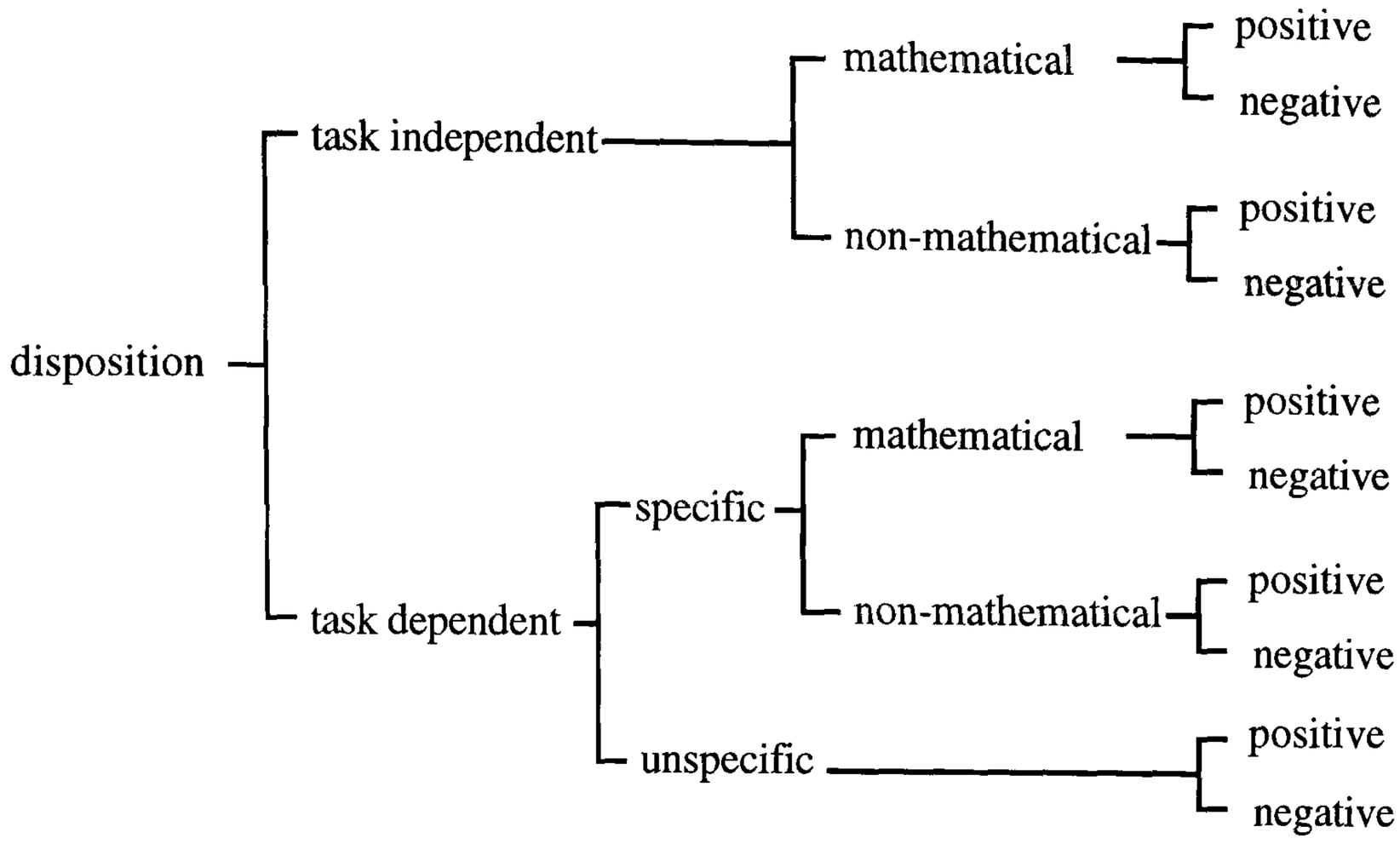


*Figure 11.2: The acquirer disposition subsystem*

The manner in which distinctions are made between the various forms of acquirer disposition statements is similar to the way in which distinctions are made between the different forms of acquirer competence statements. Examples of each of the forms of statement are given below.

*Task independent statements*

Mathematical

- he's always been interested in numbers (positive).

Non-mathematical

- my daughter loves cutting and gluing anyhow it's one of her favourite things (positive).
- he's got to feel engaged within ten minutes (negative).

*Task dependent statements*

Specific

Mathematical

- I'm not going to bother doing that because that's stupid and I can measure so why am I doing this (negative).

Non-mathematical

- she actually was quite enjoying the cutting out of the actual letters (positive).

- He found it quite tedious to cut out the drawings (negative).

Unspecific

- she did enjoy that (positive).
- Georgie didn't want to know (negative).

### 11.6.3 TASK FOCUSED STATEMENTS

These statements directly address the task. They either provide an evaluation of the task (*task evaluation*) or they describe the manner in which the task was carried out (*task realisation*). Realisation statements include those that concern time, place and materials. The sub-networks for each form of comment are described below. Both sub-networks follow the structure developed for the description of acquirer comments.

#### *11.6.3.1 Task realisation*

The sub-network for classification of task realisation statements is given in Figure 11.3 below.

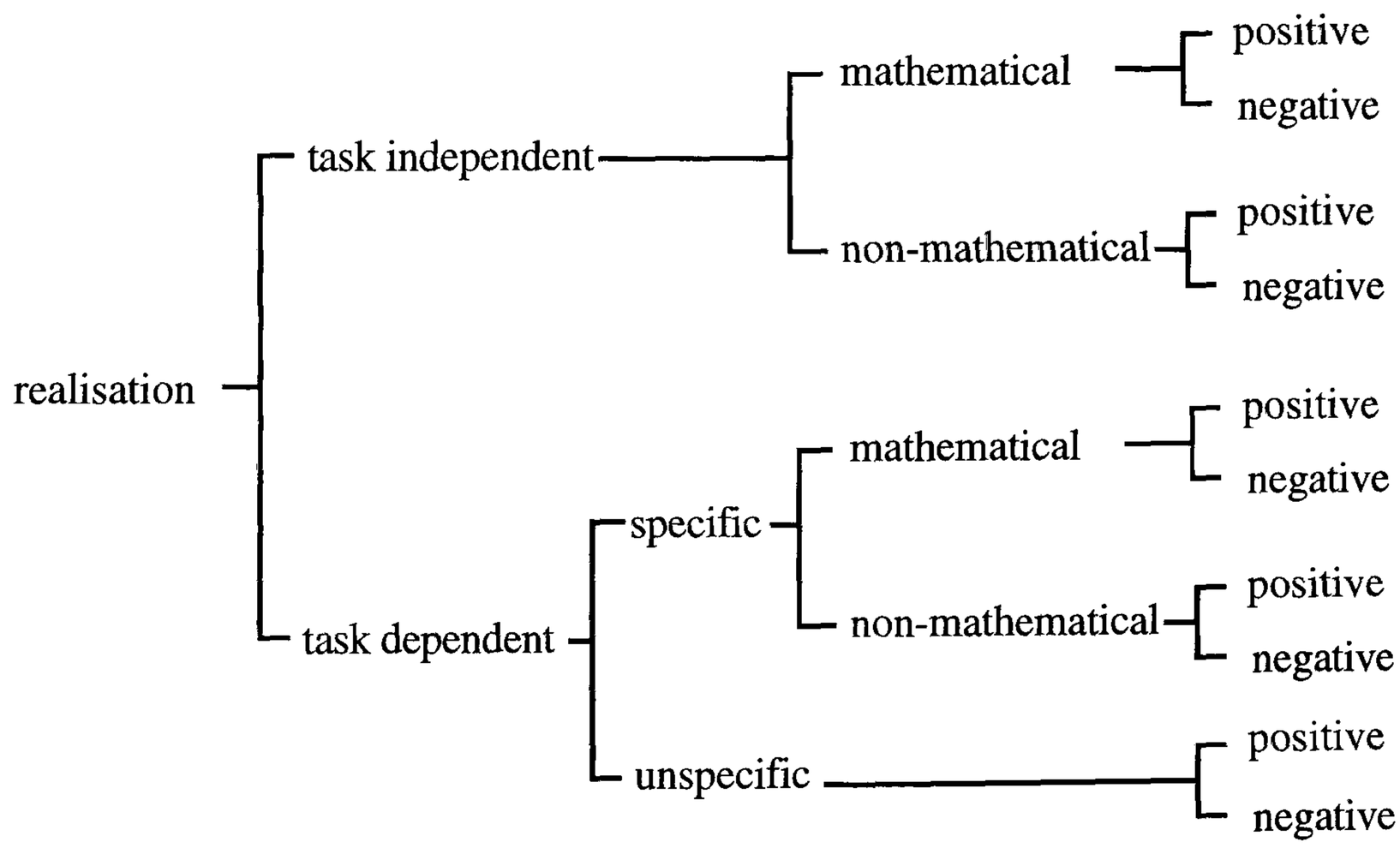


*Figure 11.3: The task realisation subsystem*

In the interviews, parents are asked to discuss specific IMPACT tasks that they have done with their children. In most of the interviews this involves giving some account of

the manner in which the task was carried out. Where the statements made go beyond the immediate setting of the task being discussed, they are classified as *task independent* statements. As with the task independent acquirer statements, these statements are in some respect *generalised.* They might, for instance, demonstrate that the task being treated as an example of a particular category of task types (e.g. 'with multiplication activities like this we ...'). Alternatively they might relay information about generalised pedagogic principles (e.g. '... as I think it's important that the sheets are related to something in real life') or practices (e.g. 'we always do the activities after Katie has had her tea because ...' ). *Mathematical* statements of this kind index some aspect of school mathematics (as does the statement 'with multiplication activities like this we ...'). *Non-mathematical statements*, on the other hand, make no such specific reference to school mathematics. They might refer to some other aspect of the school curriculum or more general areas of pràctice.

Those statements that describe how the task is or can be carried out are coded as *positive.* All the statements that indicate some form of difficulty in the realisation of the task or describe an unresolved problem are coded as *negative.* In describing the realisation of the task, clearly a number of the statements made will not be unambiguously either positive or negative in that they provide a description of a sequence of events. Statement such as these have been coded as positive statements on the basis no reference is made to any unresolved problem or difficulty. These statements are thus codable as positive as they constitute a description of how the task was realised that was, in the opinion of the interviewee, successful. Thus, whereas positive acquirer comments present a positive image of the child (either in terms of cognitive competence or disposition), positive task realisation comments present a positive image of the parent as a competent pedagogic agent or as positively disposed towards the realisation of the IMPACT activities.

Mathematical

- Generally what we would do first on something like that is write down the prime numbers (positive).

Non-mathematical

- when she's done the task that I've asked I will , um, and then she will come and show me what she's done and we will then sit down and discuss what she's done and whatever the task is (positive).
- it tends to take a lot of the morning by the time we get the whole thing set up (negative).

*Task dependent* statements refer directly to the task being discussed. *Unspecific* statements address the realisation of the task as a procedure, commonly following the instructions on the sheet step by step or by focusing attention of the organisation and management of the context of within which the task is realised. They do not index any particular area of school mathematics (unless this is read directly from the sheet) or any form of deliberate pedagogic action on the part of the parent. In contrast, *specific* statements make reference to either some particular action taken in the realisation of the task by the parent (e.g. 'I showed him how to cut the shapes from the card') or child (e.g. 'she collected up all the shoes and then...') or index a particular aspect of school mathematics (e.g. 'this involved adding all the numbers together before...'). *Specific* statements thus exhibit a degree of analysis or purposeful action in focusing in on a particular aspect of the realisation of the task. As in the other subsystems of the network, these statements are divided into *mathematical* and *non-mathematical* statements. Examples of each form of statement is given below.

Specific

Mathematical

- so I was sort of pointing out perhaps odd objects and that in the room and asking him to count how many (positive).
- the hardest thing I think was trying to explain that um, within that scale you had to imagine what, um, what proportion of the drawing would be taken up by your head or your arm or what have you (negative).

Non-mathematical

- We had a teddy bear, butterflies, everything. We had to like, they had to draw them and then cut them out and colour them. (positive).
- after they'd done so many different ways they actually got bored. They didn't want to do anymore (negative).

Unspecific

- we just played with that for a couple of hours (positive).
- he was just getting fed up and so I thought well there's no point in pursuing it anymore (negative).

### *11.6.3.2 Task evaluation*

Task evaluation comments are those in which some judgement of the task is made by the interviewee (for instance, a judgement of its appropriateness, of the manner in which it is described or of its novelty). The sub-network is given below (Figure 11.4).

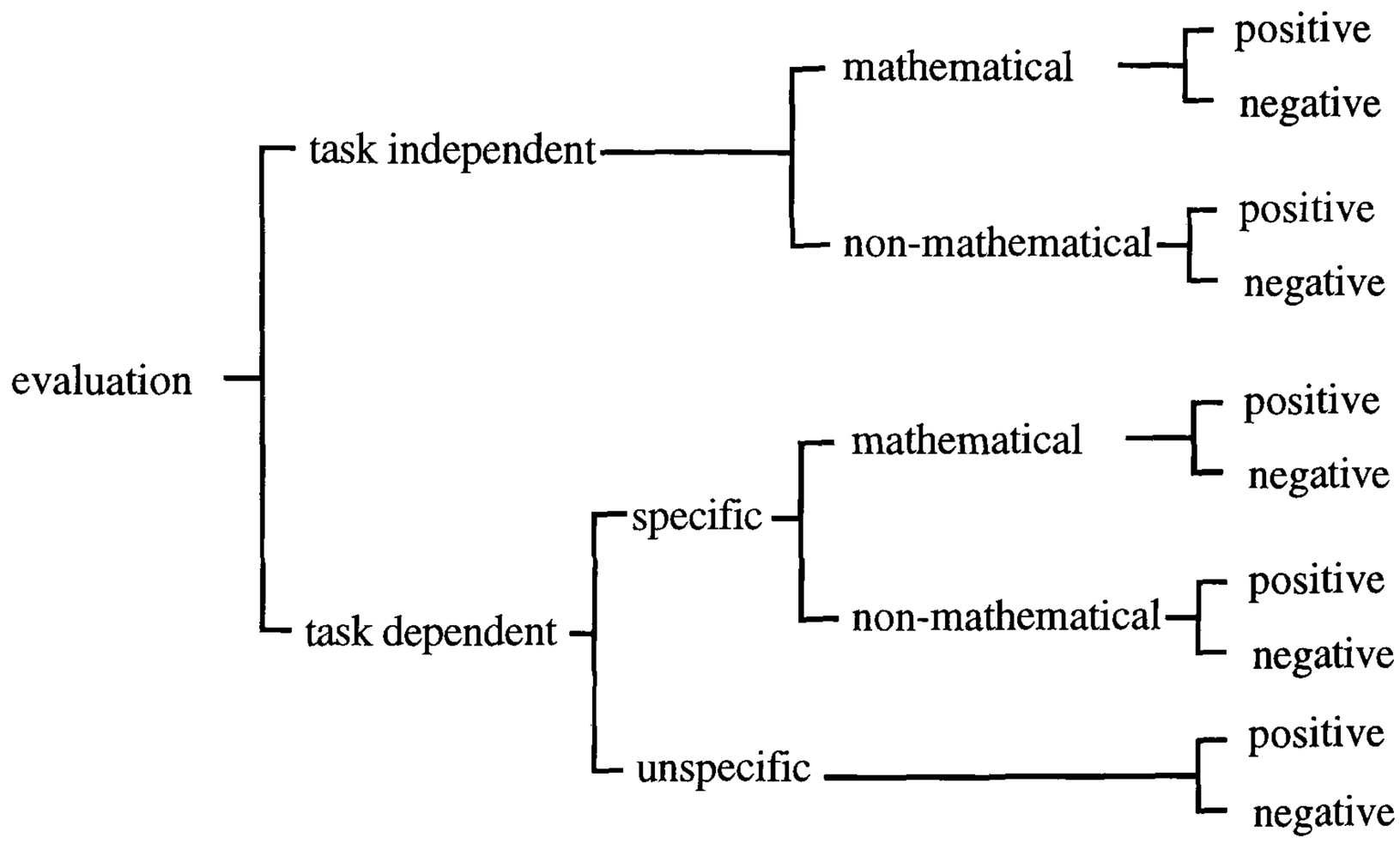


*Figure 11.4: the task evaluation subsystem*

Although the statements made refer to the specific tasks being discussed, as do the task realisation comments, some parents make more generalised evaluations. These comments are classified as *task independent*. Such comments might refer to the task as representative of a particular type or category of tasks (e.g. 'tasks like these …'). Alternatively, they might refer to a general characteristic of tasks which they view

favourably or unfavourably (e.g. 'I think that ones that make them think are good'). As with the other networks, a distinction is made between *mathematical* and *non-mathematical* statements. Positive statements are those which express a favourable evaluation of a task or class of tasks. Negative statements express an unfavourable evaluation of the task. Thus, positive evaluations project an image of the parent as positively disposed towards IMPACT as it is realised in the activities they are discussing.

The distinction between specific mathematical, specific non-mathematical and unspecific comments is much the same as for the other networks. For an evaluation to be classified as mathematical, it would have to be the school mathematics aspect of the task which was being referred to in the evaluation. For example, the negative evaluation 'it was a bit boring because it was just loads of numbers written out, repetition of the same thing' would be considered to be specific non-mathematical because the focus of the evaluation is on the form and format of the task, not it's mathematical content.

Examples of the various forms of task evaluation statements are given below.

*Task independent statements*

Mathematical

- I like things that practice tables (positive).
- Coming to this particular type of exercise, one of the problems that we experience is the different units. Because whenever we go to talk we talk feet and inches. (negative).

Non-mathematical

- things like this do tend to go down quite well because they all to join in (positive).
- The first problem with IMPACT is actually sitting the child down and getting them concentrating (negative).

*Task dependent statements*

Specific

Mathematical

- a good way of teaching mathematical skills, counting, adding, subtracting, very enjoyable (positive).

- I was thinking just tonight, just as I was looking at that, they haven't got um, beakers here, if they had beakers with units (negative).

Non-mathematical

- I thought that was really good cos the child would really have to think 'Oh gosh' and really start to get them thinking (positive).
- there's not a lot of structure to that and certainly I'm not sure that every parent would, there's no structure to it is there (negative).

Unspecific

- That was really good that one was (positive).
- That one was a bit dull. (negative).

## 11.7 Results of the coding

All the interviews were transcribed and text files created for each one. The relevant sections of the interviews were coded according to the networks described above using HyperResearch. When the coding was complete, a matrix summarising the code profile for each interview was drawn up (see Figure 11.5 for an example). The columns of the matrix refer to the *focus* of the comment (i.e. the first two levels of the network) and the rows refer to the *form* of the comment (i.e. the subsequent levels of the network). Each cell thus contains the number of incidences of a particular kind of comment in the transcript of a particular interviewee. The figures in brackets give the breakdown of this number into positive and negative statements. Using the matrices, the distribution of the different kinds of statements could be explored. At any stage in the analysis, the original source material from the interviews could be recalled with associated codes using HyperResearch.

Using the completed coding matrices, I have focused on particular aspects of the form and content of the statements made by the interviewees. In doing this I have been guided by the analysis of comments made by parents in IMPACT diaries (see Chapter 6). In the following sections I consider the results of the analysis in terms of the pattern of distribution of comments, positive and negative statements about the child and the

ratio of evaluation to realisation statements. Following this, I discuss the significance of these results with reference to the earlier analyses.

| | | Acquirer | | Task | | |
|---|---|---|---|---|---|---|
| | | Competence | Disposition | Evaluation | Realisation | *Totals* |
| Task independent | Mathematical | 2 (2+) | | | | 2 (2+) (6.3%) |
| | Non-mathematical | 1 (1+) | 1 (1+) | | | 2 (2+) (6.3%) |
| Task dependent | Specific (mathematical) | | 1 (1-) | | 2 (1+/1-) | 3 (1+/2-) (9.4%) |
| | Specific (non-mathematical) | | | | 10 (7+/3-) | 10 (7+/3-) (31.3%) |
| | Unspecific | 2 (2-) | 7 (3+/4-) | 4 (3+/1-) | 2(2-) | 15 (6+/9-) (46.9%) |
| | *Totals* | 5 (3+/2-) (15.6%) | 9 (4+/5-) (28.1%) | 4 (3+/1-) (12.5%) | 14 (8+/6-) (43.8%) | 32 (18+/14-) |

*Figure 11.5: Example of a completed coding matrix (Heather Powell)*

Throughout this chapter I maintain my focus on social class. It is important to note that the interviews with the working class and the middle class parents are approximately of the same length and the number of coded statements in the relevant sections of the two sets of interviews are comparable (see Table 11.1 below)

| | Acquirer competence | Acquirer disposition | Task evaluation | Task realisation | Totals |
|---|---|---|---|---|---|
| Middle class | 46 | 36 | 72 | 192 | 346 |
| Working class | 41 | 32 | 62 | 203 | 338 |

*Table 11.1: Number of coded statements made by social class*

The overall distribution of comments made, aggregated according to social class, is given in Tables A7.1 (middle class) and A7.4 (working class) in Appendix 7. Tables are also given for the outcomes for the middle class discourse oriented and pedagogy oriented groups (Tables A7.2 and A7.3 respectively) and the working class pedagogy oriented and locale oriented groups (Tables A7.5 and A7.6 respectively).

### 11.7.1 FORM OF THE STATEMENTS

#### *11.7.1.1 Task independent and task dependent*

As in the analysis of the diaries, a distinction can be made between those parents who spontaneously make both task independent and task dependent statements when discussing the IMPACT tasks and those who make only task dependent statements. I have called the former *generalisers* and the latter *localisers*. For the purposes of classification, we can state the following definitions.

- *Generalisers*: spontaneously make some task independent statements (i.e. spontaneously make both task independent and task dependent statements).
- *Localisers*: make only task dependent statements.

Table 11.2 below gives the distribution of households classified according to social class.

| | Middle class | Working class |
|---|---|---|
| Generalisers | Barton, Burbridge, Chapman, Greenaway, Howells, Hudson, Olowe, Kirkwood, Murray, Parry, Powell, Winters | Baker, Collins, Peters, Rawlings, Thomas |
| Localisers | Easthope, Khan | Bremner, Drake, Geary, Gibson, House, Paice, Patrick, Stuart, Woods |

*Table 11.2: Distribution of generalisers and localisers according to social class*

The distribution of households expressed in numerical terms is given in Table 11.3. In order to test the statistical significance of the observed differences in the distribution of localisers and generalisers between the working class and middle class groups, a chi squared test was carried out (see discussion of assumptions and procedures in Section 6.5.1). The value of $\chi^2$ obtained (7.336) exceeds the critical value for one degree of freedom at a confidence level of 99% ($\chi^2$ = 6.635). On this basis we can assert that there is a statistically significant association between semantic orientation (localising/generalising) and social class.

| | Middle class | Working class | Row totals |
|---|---|---|---|
| Generalisers | 12 | 5 | 17 |
| Localisers | 2 | 9 | 11 |
| Column totals | 14 | 14 | 28 |

($\chi^2$ =7.336, df=1, significant at p<0.01 level)

*Table 11.3: Frequencies of generalisers and localisers according to social class*

This concurs with the analysis of the IMPACT diaries. Unlike the diaries, for which we did not have data regarding social class at an individual level, we can now make a direct association between individual social class position and semantic orientation. This, in turn, allows us to look at the characteristics of particular sub-groups within each of the broad social class categories. We can, for instance, look at the characteristics of the statements made by members of the discourse and pedagogy oriented middle class groups and members of the pedagogy oriented and locale oriented working class groups.

From Table 11.2, it can be seen that two members of the middle class group do not make any context independent statements when discussing the IMPACT tasks they have carried out. Both are members of the discourse oriented group. Of the five working

class parents who make context independent comments, all but one (Sharon Baker) are members of the pedagogy oriented group. The characteristics of this distribution are discussed in Section 11.3 below.

If we look at the distribution of task independent, task dependent specific and unspecific statements according to social class, we can see distinct differences between the middle class and the working class groups (see Table 11.4 which gives the incidence of each type of comment as a percentage of the total number of comments for each group with raw scores given in brackets).

| | Independent mathematical | Independent non-mathematical | Dependent specific mathematical | Dependent specific non-mathematical | Dependent unspecific | Totals |
|---|---|---|---|---|---|---|
| Middle class | 4.9% (17) | 13.9% (48) | 24.6% (85) | 19.7% (68) | 37% (128) | 100.1% (346) |
| Working class | - | 10.7% (36) | 10.1% (34) | 12.1% (41) | 67.2% (227) | 100.1% (338) |

(N.B. percentages may not add up to exactly 100% due to rounding)

*Table 11.4: Proportional breakdown of comment types by class*

From this it can be seen that for the middle class parents, task independent statements constitute greater proportion of the total than for the working class parents (18.8% as compared to 10.7%). Related to this, there is a marked difference in the proportion of unspecific comments (37% of the total for the middle class group compared with 67.2% for the working class group). Thus, as with the diary comments, we can see that the accounts given by the working class parents focus to a greater extent on the immediate characteristics of the task and its realisation, and on the behaviour of the child in relation to these, than the accounts of the middle class group.

We can also look at variation within the social class groups in this way. Further dividing the sample into middle class discourse and pedagogy oriented groups and working class pedagogy oriented and locale oriented groups, we can explore differences within classes in the form of distribution of statement types (see Table 11.5).

| | Independ-ent mathematical | Independent non-mathematical | Dependent specific mathematical | Dependent specific non-mathematical | Dependent unspecific | Totals |
|---|---|---|---|---|---|---|
| Middle class discourse | 5.5% (8) | 12.3% (18) | 30.8% (45) | 15.8% (23) | 35.6% (52) | 100% (146) |
| Middle class pedagogy | 4.5% (9) | 15% (30) | 20% (40) | 22.5% (45) | 38% (76) | 100% (200) |
| Working class pedagogy | - | 12.3% (26) | 9.9% (21) | 9% (19) | 68.9% (146) | 100.1% (212) |
| Working class locale | - | 7.9% (10) | 10.3% (13) | 17.5% (22) | 64.3% (81) | 100% (126) |

(N.B. percentages may not add up to exactly 100% due to rounding)

*Table 11.5: Proportional breakdown of comment types by sub-group*

The distribution of the comment types for each within class sub-group is generally consistent with the overall class group distribution, with only very slight differences in the proportions of each type of statement in most cases.

#### *11.7.1.2 Mathematical and non-mathematical*

From Table 11.4, it can be seen that the middle class parents more frequently index school mathematics in their accounts than the working class parents (29.5% of the total statements compared with 10.9%). Amongst the middle class parents, 26% (17 out of 65) of the task independent statements refer explicitly to school mathematics (compared to none of the statements of the working class parents). For the task specific statements,

55.6% (85 out of 153) of the statements made by the middle class parents index school mathematics, compared to 45.3% (34 out of 75) of the statements made by the working class parents.

If we take the interviewee as the unit of analysis (rather than the statement), we see that eight parents (all middle class) made both task independent and task dependent mathematical statements. Four parents (all working class) made no mathematical statements at all. The remaining 16 interviewees each made some task dependent mathematical comments. From this, and from Table 11.4, we can see that there are distinct differences in the manner in which school mathematics is indexed in the accounts of middle class and working class parents.

If we break the sample down into sub-groups (see Table 11.5), we see that the middle class discourse oriented group makes a greater proportion of mathematical comments (36.3% compared with 24.5%) than the pedagogy oriented group. This is much as would be expected, given the discussion in Chapter 10 of access to mathematical discourse and its effects.

No task independent mathematical statements are made by the working class parents. The difference between the pedagogy oriented and the locale oriented working class groups in the proportions of the total number of tasks that index school mathematics is minimal (9.9% compared with 10.3%). If we look specifically at the breakdown of task specific statements, we can see that for the pedagogy oriented group, 52.5% of the task dependent statements (21 out of 40) are mathematical, whereas for the locale oriented group only 37.1% of the task dependent statements (13 out of 35) are mathematical.

### 11.7.2 Focus of the statements

From Table 11.1 it can be seen that there is little difference between the middle class parents and the working class parents in the distribution of statements according to *focus*. The differences lie, as would be expected from the results presented above, in

how the *form* of the statement relates to the *focus*. This is considered briefly for the acquirer and the task statements in turn below.

#### *11.7.2.1 Acquirer competence and acquirer disposition*

A high proportion of acquirer statements made by middle class parent make explicit reference to school mathematics. For instance, 63% of the acquirer competence statements made by middle class parents (29 out of 46) were classified as mathematical, compared with 12.2% of those made by working class parents (5 out of 41). They also made a higher proportion of independent acquirer statements (28% of the middle class acquirer focused statements compared with 17.8% of the working class acquirer statements).

In the analysis of the IMPACT diaries (see Chapter 6), it was noted that the ratio of positive to negative acquirer focused comments was substantially higher in the diaries from the more middle class school than the other schools. This, it was argued, had the consequence of a more positive image of themselves and their children being relayed by middle class parents to the school. This is not the case in the context of the interview. If we make a direct comparison of all forms of acquirer comments, the ratio of positive to negative comments is very similar, with the working class parents making a slightly higher proportion of positive statements about their children (see the first column of Table 11.6).

| | Acquirer (pos:neg) | Acquirer competence (pos: neg) | Acquirer disposition (pos:neg) |
|---|---|---|---|
| Middle class | 2.04:1 (55:27) | 2.29:1 (32:14) | 1.77:1 (23:13) |
| Working class | 3.3:1 (56:17) | 1.93:1 (27:14) | 9.67:1 (29:3) |

*Table 11.6: Ratio of positive to negative acquirer statements*

If the acquirer comments are broken down into those addressing competence and those addressing disposition (see the second and third columns of Table 11.6), we can see that there is marked difference in the distribution of positive and negative statements, with the working class parents describing the disposition of their children in predominantly positive terms.

#### *11.7.2.2 Task evaluation and task realisation*

The analysis of the diaries also drew attention to a marked difference in the ratio of evaluation to realisation comments between the diaries from the most middle class and the most working class schools. In the former more realisation than evaluation comments were made whereas in the latter far more evaluation than realisation comments were made. This, I argued, acted to position the middle class parents as relating the outcomes of the task to the form of realisation of the task. The comments made by the working class parents, in contrast, had the effect of identifying the form of the task more closely with outcomes. In the interviews, both group make more realisation than evaluation comments (192 realisation statements compared with 72 evaluation statements made by the middle class parents, 203 realisation statements compared with 62 evaluation statements made by the working class parents). As with the acquirer focused statements, differences between the groups with respect to task statements relates not to the ratio of realisation to evaluation statements, but in the form of statements made. For example, in line with the discussion in Section 11.7.1 above, the task realisation and evaluation comments made by the working class parents are predominantly unspecific in nature (68.5% and 67.7% respectively, compared with 40% and 40.3% for the middle class parents).

The task realisation statements made by both the middle class and the working class parents are overwhelmingly positive (respectively, 79.2% and 88.7% of the task realisation statements are positive). There is some difference, though, with respect to

evaluation statements. The majority of evaluation statements made by the working class parents are positive. Of the 62 evaluation statements, 39 are positive (62.9%). The middle class parents make fewer positive than negative evaluation comments—31 positive comments out of a total of 72 evaluation comments (43.1%).

## 11.8 Discussion

The use of the networks in the analysis of the discussion of IMPACT tasks with parents demonstrates a marked difference in the *form* of the statements made by working class and middle class parents. There is little difference between the groups, however, in the overall distribution in terms of the *focus* of the statements. This relates to the nature of the interview. The *focus* of the statement (*what* the interviewee talks about) is guided to a far greater extent by the question than is the *form* of the statement (*how* the interviewee talks about the topic introduced in the question). In making a diary entry, the parent apparently has far greater latitude in terms of what they choose to write about in that the precise focus of the comment is not set. The constraint in making a diary entry relates, rather, to what the parent sees as a legitimate focus for their comment. Differences in the distribution of positive acquirer comments, task realisation comments and contingent comments can thus be understood in terms of what parents see as appropriate topics for diary comments which they know will be read by their child's teacher. Differences in the focus of the diary comments have an effect, I argued in Chapter 6, because they relay different kinds of information to the teacher and position the parents and their children differentially with respect to the task, school mathematics and the teacher. This is not the case with the interviews where, for example, the interviewee is asked specifically to talk about the realisation of the task.

If we turn to the form of the statements made, there are clear differences between the middle class and working class parents. As with the analysis of the diaries, there are

parents who make task independent statements which relay generalised assessments of the competence or disposition of their children or evaluations of task types or descriptions of their mode of realisation. These parents, who I have called generalisers, are predominantly middle class. There are five working class generalisers. Four of these parents have some experience of working as voluntary helpers in classrooms and are thus classified as members of the pedagogy oriented group. The task independent statements that they make are all non-mathematical, whereas some members of the middle class discourse and pedagogy oriented group make both mathematical and non-mathematical statements.

The generalisers in the sample are passing beyond the immediate context of recall of the realisation of the task, to make context independent statements, that is statements that do not require prior knowledge of the task or need a narrative account of the task to be understandable. These statements resemble the kinds of assessments of children and evaluations of tasks made by the teachers. The features of the tasks, and of the activity that result from their realisation, are instances of something else, something at a higher level of generality, such as the underlying competence of the child or the conceptual structure of school mathematics. To make in appropriate contexts, and make sense of, such statements requires some degree of access to the principles of pedagogic discourse. Middle class parents are, by virtue of their pedagogic biographies, well placed to acquire the principles of pedagogic discourse. Also, it might be argued, the vertical nature of the professional discourses with which middle class occupations are associated, in the form of social class classification adopted in this study, also places them favourably in the recognition of and engagement with pedagogic discourse, itself a mode of vertical discourse (see Bernstein, 1990, for discussion of the characteristics of pedagogic discourse).

I want to consider briefly the position of two particular sub-groups with respect to this. Firstly, there are the six discourse oriented middle class parents, whose levels of

qualifications in school mathematics exceed those of the teachers. School mathematics is not a direct translation of mathematics into institutional educational settings in any straightforward sense (see Dowling, 1998a, for discussion of the relationship between mathematics, school mathematics and everyday practice). It is, at very least, the product of a complex transformation of mathematics, a transformation in which elements of mathematics are selected, placed in new configurations with elements of other discourses, organised in a sequence for acquisition, and so forth, in ways that lie outside the logic of mathematics and are distinct from the practices of those who produce mathematical knowledge. The selective reordering and refocusing is the achievement of pedagogic discourse, which mediates between the field of production of knowledge and the field of reproduction of knowledge. Whilst the discourse oriented middle class parents may be at an advantage over the pedagogy oriented parents in reading tasks in terms of their mathematical potential, their access to mathematical discourse does not necessarily place them favourably in the realisation of the task and the production of teacher like statements about the task and its realisation. Comparison of the distribution of forms of comments and that two of the discourse oriented parents do not make any task independent statements in their discussion of the tasks can be seen as support for the suggestion made in the previous chapter that this group are, to some extent, alienated from the forms of translation of the IMPACT tasks into activities that are sanctioned by the teachers.

Secondly, there are the pedagogy oriented working class parents, four of whom make task independent statements. This group can be seen as gaining experience of the pedagogic practices of the school and the operation of pedagogic discourse through their classroom helper experience. In the Chapter 9, it was argued that they are engaged largely in regulative activities and thus associated, as in the general division of labour within the school, with routine and manual practices. This is reinforced by the manner in which, for better qualified middle class parents, being a classroom helper can be seen

as a possible first step to becoming a teacher. For the working class mothers in the sample, being a classroom helper is more closely associated with part-time manual work as, for example, a dinner or playground supervisor. All the task independent statements made the four parents in this group who are classified as generalisers are non-mathematical and focus predominantly on the disposition of the child and the realisation of the task. None of the group deploy school mathematics in their accounts in the manner of the middle class parents. This is the same for the one locale oriented working class parent who makes task independent statements. All the task independent statements focus on either the disposition of her daughter or the realisation of the task.

With these exceptions, the accounts of the working class parents focus on the operational, on how, through a sequence of actions, the task was realised within the home. As can be seen from the results of the coding, the accounts consist largely of task dependent unspecific statements, the prime focus of these being task realisation with an emphasis on features of the management of the task. The accounts of the middle class parents, in contrast, contain both these context dependent statements and those which address more general (i.e. task independent) features of pedagogy and the competence of the child. In many cases, the specific nature of the comments indicates the operation of either knowledge of mathematics or broader pedagogical knowledge.

## 11.9 Conclusion

The aim of the analysis presented in this chapter has been to build on the discussion of the teacher and parent interviews, presented in the previous three chapters, and explore, in a systematic manner, the semantic universe occupied by the interviewees. This has involved the refinement, adaptation and testing of the network developed in the analysis of the IMPACT diaries. The modified network is described in detail in this chapter, together with numerous examples from the transcripts. The outcome of the analysis has

indicated clear differences between the working class parents and the middle class parents in the form taken by the statements they make in the interview.

The network maps out the semantic possibilities with respect to statements about IMPACT tasks. The statements made by the parents are the outcome of a range of semantic selections made in the context of an interview in response to questions about the manner in which they carried out the tasks and what they felt the tasks were designed to teach. The coding of the statements enables us to make distinctions between the repertoires of the working class and middle class parents, and to make distinctions within these groups. In the previous chapters, distinctions have been made in terms of social class indicators, pedagogic biographies and pedagogic practices inferred from responses to interview questions. The analysis presented in this chapter relates these differences to more fundamental differences in what can be said by whom and how it can be said. The previous two chapters have, thus, provided detail on the content of 'pedagogic habitus', as it relates to primary school mathematics, and have outlined the processes that act as the basis for the production of differential orientations to schooling and socially differentiated pedagogic practices. This chapter has shifted focus to the semantic orientations of working class and middle class parents. In combination with the previous chapters, this analysis has reinforced the claim that modes of engagement with school mathematics tasks in the home, and orientation to pedagogy and schooling more generally, are fundamentally associated with social class. It has also reinforced the critique of explanations of social class inequalities in education that focus on differences in economic, social and cultural capital without adequately specifying the nature of these differences, the processes that give rise to these differences and the effects of these differences within the field of education.

# Chapter 12 Conclusions

In this concluding chapter, I will return to my initial set of questions and briefly trace the manner in I have addressed these in this thesis. Following this brief overview, I will discuss the limitations of the empirical work carried out before moving on to consideration of the main achievements of each phase of the work and the contribution made by the thesis as whole. In the final section of this chapter, I will consider some possible directions for future research that have arisen from this work.

## 12.1 The question

The initial motivation for this study was concern that the manner in which innovations in primary mathematics, as in other phases of schooling and other areas of the curriculum, are commonly presented as socially neutral, that is as being of benefit to all children irrespective of, for instance, social class. When I first started work on this thesis, parental involvement in primary schooling was widely feted as an important component in the improvement of the quality of education in the UK and elsewhere. The IMPACT project provided a means by which primary schools could involve parents in the mathematical education of their children. Over the period in which I have conducted the research, the IMPACT project has become the most widely practised primary mathematics parental involvement initiative in the UK and has attained world-wide influence. Given the high degree of interest amongst policy makers, practitioners and researchers, parental involvement in primary mathematics, in general, and the IMPACT project, in particular, became an apposite focus for my research.

My main interest has been in differences in the positioning of working class and middle class parents with respect to the school, differences in pedagogic practice and differences in access to the principles and criteria for the realisation and evaluation of

school mathematics tasks. Through the conduct of a sequence of empirical studies, I have explored these issues in a manner which focuses on the processes of (re)production of social class difference. The outcomes of the three studies reported in this thesis are presented in Section 12.3 below. The limitations of this empirical work are considered in the next section.

## 12.2 Limitations of the empirical work

### 12.2.1 Consistency and the relationship between the studies

The empirical work is presented as a sequence of three closely related studies. The move from one study to the next marks a shift in the focus of the analysis (from the positioning of parents by teachers, to the self-positioning parents, to the relationship between, and differences within, the discourse and practices of teachers and parents) and the form of data being analysed (from booklets for parents, to IMPACT diaries, to interview transcripts). In each study, a case is made for the appropriateness of the form of sampling, the data collection strategies and mode of analysis. The outcomes of one study clearly feed into the next. The argument for consistency between the studies is made on the basis of common methodological and conceptual frameworks. Thus, from the initial theoretical starting points (see Chapter 1), critical engagement with related work in the field (see Chapter 3) and the adoption of a particular methodological position (see Chapter 4), the successive phases of the empirical work have contributed to the development and refinement of a language for the description of the social dynamics of parental participation in primary school mathematics and of relations between school and home more generally.

Despite this argument for the conceptual and methodological consistency across the studies, two possible criticisms of the empirical strategy adopted come to mind. Firstly, it might be argued that the investigation of the relationship between social class and parental

participation could have been strengthened substantially by establishing a closer relationship between the sources of the empirical data for the three studies. The booklet sample, the diary sample and the Midbury sample are completely independent. It might be argued that the overall study would have been stronger if a relationship could be established between the form of booklet, the use of diaries by the parents and teachers, the strategies and selection/evaluation criteria of teachers and the social characteristics, orientations and pedagogic practices of the parents. This could be achieved by drawing the sample of diaries from schools within the LEA from which booklets were collected and basing the subsequent sample for the interviews on these schools. This would enable, for example, a tighter specification of the social class characteristics of the schools in the diary study and thus a clearer relationship to be drawn between the social class and pedagogic biography of the parent and the form of comments made in the diary. There are, however, clear difficulties in organising the sampling in this way, not least the temporal organisation of the studies. For instance, it would not have been clear what the criteria for the selection of the sample for the final study should be before the other two studies had been carried out. Thus, whilst a closer relationship between the samples used in the three studies would enable certain lines of argument to be more clearly established, this would impose limitations on sampling that would make it more difficult to ensure that a close match is established between the aims of each study and the sample drawn.

A second set of questions that could be raised relates to differences in the context of production of the data texts. The booklets are clearly produced by teachers for parents. The diary entries are made by each parent for their child's teacher to read. The interview responses are made in a dialogue between interviewee and researcher. The form of analysis adopted has to account for the context within which parents and teachers are positioning themselves and each other. I have attempted to deal with this by employing forms of analysis that relate to the nature of the data text (e.g. the use of a form of semiotic analysis in looking at booklets for parents and semantic networks in looking at

the comments made by parents in the diaries) and by ensuring that there is a clear relationship between the aim of each study and the form of data texts that are analysed (e.g. the interest in the booklets is the manner in which teachers position themselves and parents). The interviews clearly present a problem in that it is difficult to account for the relationship between what is said, how it is said and what kind of setting the interview is seen to be by interviewer and interviewee (particularly in the light of class, ethnicity and gender relations). In adapting the semantic network developed in the analysis of the diaries for use in the analysis of the interviews, I have attempted to account for differences in the context of production of the data texts in the redescription of the distinctions made, the use of extracts from the interview in the exemplification of the distinctions and the testing of the reliability of the network with the interview transcripts.

### 12.2.2 CONSIDERATION OF GENDER AND ETHNICITY

At the very beginning of the thesis it is noted that, whilst the focus of this research is on 'parents', we know from other research in the field of parental involvement in primary schooling that it is largely mothers who mediate between home and school and who take part in pedagogic activities in the home with their children. This is echoed in the interviews with the Midbury teachers and in the responses of the Midbury parents. On the basis of the teacher interviews, I am able to state that the contact that teachers have is largely with mothers and that they believe that it is largely mothers who do the activities with their children. On the basis of the parent interviews, I can make statements about the stated domestic division of labour with respect to IMPACT. I am not, however, able to make strong statements about the nature of mothers' and fathers' involvement in IMPACT. For instance, I am not able to determine whether or not the comments made in the diaries are made by mothers or fathers (or indeed older brothers or sisters or other people in the household). In the selection of the Midbury parent sample I wanted to interview the person who mostly carried out the activities with their children. This gave a

sample containing both mothers and fathers. The sample size for this study is small and as only a small number of fathers are interviewed, a comparison based on gender is not possible. Gender is, however, of central importance in the form of explanation offered in the thesis. In relation to pedagogic biography, for instance, it is important to note that all the parents who have classroom helper experience are, much as to be expected, women. The nature of the IMPACT initiative, my sample and the form of data collected has placed me in the position of discussing the involvement of parents, in general, rather than mothers, in particular.

In common with Lareau, I have attempted to control for ethnicity. I have attempted to maintain a clear focus on social class throughout the study and have controlled as best I can for ethnicity as an acknowledgement of the complex interaction between class and ethnicity. In particular, I have avoided drawing the sample of diaries from areas with a significant proportion of children whose parents might be speakers of languages other than English at home. In selecting the Midbury sample, I chose areas that did not have a significant proportion of families from ethnic minority backgrounds. Whilst there are advantages to this strategy, it leaves me unable to address the interaction between class and ethnicity in the context of relations between home and school.

### 12.2.3 The perspectives and characteristics of children

I have focused on texts and accounts produced by parents and teachers. I have not investigated the perspectives of the children and their modes of participation in IMPACT. This is a consequence of the particular set of questions I have addressed and a limitation imposed by the scale of the project; it is not a denial of the importance of the part played by the child in the practice of IMPACT. I have treated the child as the object of pedagogic practice and as a relay between home and school. I have not addressed the nature of this relay. To do so would clearly add another dimension to the account produced here. Recent research has paid attention to the manner in which children relate home and school

contexts and the relationship between their performances in different settings. Hughes & Greenhough (1998) have, for example, studied the manner in which 32 KS1 children engage with similar IMPACT activities at school with a teacher and at home with a parent. Drawing on notions of situated learning (see, for instance, Lave, 1988; Lave & Wenger, 1991), they have sought to investigate the connections between the school activity and the home activity by the children. Pollard (1996), through case studies of five children over the first three years of their primary schooling, has explored the complex relationship between the child's relationships at home and at school, the strategies they employ in these settings and the development of child's identity and orientation to learning. Neither of these studies, however, address social class differences.

One important characteristic which it has not been possible to address in the studies presented in this thesis is the level of attainment of the child. The manner in which the sample of diaries was gathered did not allow me access to data on the levels of attainment of the children. I have, thus, not been able to investigate the possible relationship between levels of attainment and the form and content of the comments made by parents in the diaries. In the selection of the sample for the Midbury parent interviews I aimed to control for the age of the child and for the teachers perception of the enthusiasm of the parents for IMPACT. I did not control for the level of attainment of the child. This would have complicated the sampling strategy to a degree that would not have been appropriate for a small scale study such as this. Furthermore, I felt that, in the context of the interview with the teachers, detailed discussion of attainment in mathematics would have drawn attention away from the main focus of the interview and made discussion of the parents and children's engagement with IMPACT more difficult. There would also have been difficulty in establishing a common set on indicators of attainment across the sample of teachers. Clearly, though, the level of attainment of the child in mathematics could be a key factor in shaping the mode of engagement of the parents in pedagogic activities in the

home. The level of attainment of the child would thus be an important factor in any future exploration.

### 12.2.4 SAMPLING AND LIMITS ON GENERALISATION

The Midbury study is clearly limited in scale. The small size of the teacher and parent sample places limitations on generalisability. The selection of schools, teachers and parents is purposive and is motivated by the nature of the questions being addressed. The schools were selected to provide the required social class diversity in areas that were not ethnically diverse and in a LEA which had a longstanding involvement with IMPACT. The teachers were selected to control for the age of the children and to ensure depth of experience in the use of IMPACT tasks. The parents were selected to represent a range of levels of enthusiasm for IMPACT. This is clearly not straightforward. It is, for instance, difficult to account for the different ways in which teachers interpret and judge 'level of enthusiasm': this cannot be treated as an objective criteria, hence the differences between the teachers' ratings and the parents' self-ratings noted in Section 10.3.2.

The purposive sampling enables the issues that lie at the heart of the research to be explored within the confines of a small scale study. This enables particular sets of relationships to be explored and a mode of analysis and a language of description that enables the principled movement between data and theory to be developed. Clearly, a motivated sample like this does not represent the population of parents and teachers participating in IMPACT. This does not invalidate the claims that are made or the language that is developed. It does point to the need to conduct wider ranging studies if I am to strengthen any claim that the relationships proposed here are more generally applicable to the population as a whole and if I am to test and further develop the language of description.

### 12.2.5 THE LIMITATIONS OF NETWORK ANALYSIS

The strengths of the form of network analysis adopted in the analysis of the diaries and of parents' discussion of IMPACT tasks have been discussed earlier in the thesis. In the analysis of the diary comments, the development of the network enables description the entire text in a theoretically informed manner. The distinctions made within the network can be clearly defined and exemplified using extracts from the data. Networks can be extended to make finer and finer distinctions and thus increase the degree of delicacy of the analysis. The coherence and reliability of the networks can be tested by teaching other people to use them and cross-checking coding. Ultimately it is possible to describe and compare the characteristics of texts, and thus the texts produced by particular groups of people, in quantitative terms.

These strengths bring with them a range of limitations. This form of highly detailed analysis of texts requires that they are broken up into fragments for coding. This entails the loss of the wider coherence of the text as a whole and the interaction between meanings within the text. It thus represents a compromise between detail and a more holistic approach to the analysis of texts.

Related to this, network analysis is limited in its applicability to long, complex, embedded texts. This is illustrated by the use of the network in the analysis of the Midbury parent interviews. With texts of this sort, it is necessary to select relevant sections for coding using particular networks and to develop additional networks that are appropriate to the various components parts of the text. In the analysis of the interviews, the detailed network developed in the analysis of the diaries is adapted and further developed to code the sections of the interview where parents describe and analyse the IMPACT tasks they have carried out with their children. To deal with other aspects of the interview would require the further development of appropriate networks. In the analysis of the Midbury interviews, different sections of the interviews have been treated in different

ways. Some sections have, for instance, been treated as providing information (e.g. about the educational background of the interviewee).

The identification of particular parts of the interview for analysis and the development of ever greater levels of delicacy in the analysis makes demands regarding the extensiveness of text. For instance, within their accounts some parents provide analyses of the IMPACT tasks. It was possible to begin to develop a network specifically for the analysis of these parts of the interview. The application of this could not be developed with respect to these interviews as the amount of text which addresses the analysis of tasks by parents is very limited. To take this further, an interview which focused to a far greater extent on parents' analysis of tasks would have to be conducted in order to provide sufficient text for analysis for the development and use of networks.

Finally, the development, refinement, use and testing of networks is extremely time intensive. This places severe limitations on their use within studies of this sort. The use of networks also places demands on the amount of space required in order to describe the networks and elaborate the results of the analysis.

## 12.3 Issues raised

### 12.3.1 Main points from chapters

The opening chapter states the main research question, establishes the motivation for the study and outlines briefly the theoretical and methodological starting points for the study. The second chapter provides an overview of parental involvement in schooling, in general, and the IMPACT project, in particular. The chapter demonstrates that parental participation in schooling is a central tenet of public education policy in the UK and elsewhere and relates to a general increased state interest in the regulation of the family and domestic activity. With respect to IMPACT, an account of the genesis and operation of the project is given and a critical review of the research carried out within the project is

conducted. This research is shown to be limited in scope and as treating social variables, particularly social class, as marginal in its description and evaluation of the IMPACT process. With respect to this, some of the tensions inherent in the relationship between the form of intervention proposed by the IMPACT project and its objective to transform relations between parents/homes and teachers/schools are explored. It is argued that these tension have led the project and its implementation into the heart of the longstanding deficit/difference debate.

This issue is picked up in the third chapter, the main focus of which is a critical discussion of recent sociological research into the relations between parents and primary schooling. As well as addressing the nature of the empirical work and the results of this, critical attention is given to the manner in which theories of social and cultural (re)production, and particularly the form of theorising associated with Bourdieu, are deployed within this work. In the latter part of the chapter specific attention is paid to Bourdieu's work. In particular questions are raised about the usefulness of the concept of habitus in explanations of the relationship between education and social (re)production. Of particular concern is the manner in which high level theorising is brought to bear on empirical data without sufficient attention being paid to the operationalisation of the theory. The specific processes and content of both 'habitus' and 'cultural capital' are, it is argued, inadequately specified at the empirical level in the studies discussed in this chapter. Furthermore, this form of theorising itself, in its treatment of cultural content as arbitrary, draws attention away from the exploration and specification of the processes that produce socially differentiated orientations and practices in both school and domestic settings, and thus produce socially differentiated outcomes.

Following on from this discussion, Chapter 4 presents the general methodological approach taken in the empirical work and provides an overview of the empirical programme. In particular, this chapter makes clear the relationship between theory and empirical investigation being adopted in this thesis. Theory is presented as providing a

set of initial orientations which inform the identification of relevant questions, the design and conduct of the research and the mode of analysis of the data. The analysis of the data constitutes the development of a language which facilitates translation between data and theory, in other words the development of what Bernstein refers to as a 'language of description'. The development of this language establishes a non-circular relationship between data and theory. The result of the process of research is both the development of this language of description and the greater specification and refinement of theory.

The first of the empirical studies is presented in Chapter 5. This explores the positioning of parents in and through IMPACT booklets produced by schools. The mode of analysis draws on Dowling's language of description of pedagogic texts. The analysis demonstrates that the booklets present parents as a homogeneous group. They are positioned as being subordinate to teachers with respect to school mathematics. The domestic practice of parents in presented as highly localised and participation in school mathematics is presented in highly proceduralised terms. The spontaneous pedagogic potential of the home is presented as having been exhausted, thus opening the home to appropriation by the school as a secondary site for official pedagogic action. The analysis demonstrates that there is a remarkable consistency between the booklets described in these terms. One booklet provides a striking contrast. This does not, it is argued, (re)produce a tacit pedagogic relation between the teacher and the parent, but rather a market relation. This form of relation is, it is argued, in conflict with the ideology of the IMPACT project, hence the withdrawal of this booklet.

The study presented in Chapter 6 examines the ways in which parents position themselves with respect to the teacher/school through the analysis of the comments made by parents in IMPACT diaries. The analysis involves the construction of a semantic network which is then used to code the comments made by parents in the diaries. Distinctions are made between comments in terms of their focus and their form. Differences in the social characteristics of the schools from which the diaries are taken

enables the relationship between the form and focus of comments and social class to be explored. The results of the analysis demonstrate that there is a statistically significant difference in the distribution of parents who make task independent comments in the diary and those who make only task dependent statements (I have called the former *generalisers* and the latter *localisers*). The generalisers relay information to the school which incorporates assessments or evaluations of their child, school mathematics tasks or the realisation of tasks which can be understood independently of the details of the specific task. These highly processed, generalised comments resemble, it is argued, the kinds of assessments and evaluations made by teachers. In contrast, the exclusively task dependent comments made by the localisers relay highly localised, relatively unprocessed, 'raw material' about the child and/or task, which is in turn open to a wide range of interpretations by the teacher. The most middle class of the schools has the highest proportion of generalisers. Parents from this school also relay a more positive image of their children, place greater emphasis on realisation of the task than on evaluation, and provide a greater amount of contingent information. The mapping of the semantic selections made by parents in writing comments in the diaries acts as the basis of the description of two different orientations to this kind of dialogue with the teacher/school. An association can then be made between the orientation of the generalisers and the vertical discourses of schooling and between the orientation of the localisers and the horizontal discourses of everyday activity. From this, a further association can be made between each group and the forms of social organisation and interaction which optimise these forms of discourse.

The analysis of the diaries does not allow the full development of this line of argument as the data on social class is at the level of school intake, not at the level of the individual parent. It also deals with what the parents select to relay to the teacher/school, rather than how they read and realise the IMPACT tasks. Furthermore, there is no data on the manner in which teachers select activities and interpret their outcomes. Given the

invisibility of the principles for the construction, realisation and evaluation of school mathematics tasks in the booklets, the question also arises as to who has access to these principles and how are they acquired. The study reported in Chapters 7 to 11 sets out to address these issues.

Chapter 7 presents details of the design and conduct of the study. The study involves interviews with twenty-eight parents and eight teachers from four schools in one LEA (which I have called Midbury). The outcome of the analysis of the interviews with the teachers is presented in Chapter 8. The selection of tasks is shown to bring both localised and generalised criteria to bear on both general and local contexts. This combination of the local and the general makes it difficult for parents who might have access to, say, more advanced mathematical discourse to challenge or to produce approximations to the selections and interpretations made by teachers. The main achievement of this chapter is to map out the manner in which the teachers read tasks, the expectations they have of how parents should realise the tasks and how they evaluate the outcomes of the tasks. This provides a basis for a comparison to be made with the reading and realisation of tasks by parents.

The outcomes of the analysis of the parent interviews are presented in Chapters 9, 10 and 11. Chapter 9 focuses on the classification of households on the basis of social class and the exploration of the 'pedagogic biographies' of the parents. The pedagogic biography is seen as constituting the processes by which parents gain differential access to particular specialised and general pedagogic resources. The focus on pedagogic biography makes it possible to move away from static notions of social, cultural or, more appropriately in this context, perhaps, pedagogic 'capital'. Rather than viewing parents as acquiring, or lacking, particular forms of 'capital', parents are seen here as acquiring particular orientations or gaining access to certain pedagogic resources through specific pedagogic experiences which operate differently according to the social class position of the parent. There is some indication, for example, that the relationship between level of

qualification in mathematics and confidence in helping their children is different for working class and middle class parents in the sample. The experience that parents have of working, in a paid or voluntary capacity, as a classroom helper, in particular, has distinctly different consequences for the middle class and working class parents in the sample. This can be related to the differential positioning of middle class and working class parents within the school, for instance the association of the former with intellectual labour and the possibility of moving from voluntary work in the school to a career as a teacher and the latter with manual labour and regulative activities within the school (such as lunchtime and playground supervision). The exploration of social class and pedagogic biography in this chapter enables distinction to be made both between and within social class groups. From this, the parent sample is divided into four groups: middle class discourse oriented, middle class pedagogy oriented, working class pedagogy oriented and working class locale oriented.

In Chapter 10, within class and between class differences in the conditions of realisation of the IMPACT tasks within the home, orientation to official pedagogic practice and parents' reading and realisation of IMPACT tasks are explored. Contrary to the homogenised image of parents and their practices presented in the IMPACT booklets, distinct differences are found between the groups in all these areas except the conditions of realisation of IMPACT tasks within the home (the one area of social class based difference that does receive attention in the IMPACT literature). The main achievements of this element of the empirical work are to demonstrate, firstly, that each of the four groups has a distinct orientation to local and official pedagogic practice and thus to the realisation of IMPACT tasks and, secondly, that the different resources and orientations that each group brings to the reading of IMPACT tasks produce readings of different levels of mathematical sophistication. The analysis highlights the centrality of social class and pedagogic biography in understanding differences in orientation to official pedagogic practice and the realisation of school mathematics tasks in the home. These relationships

are understood in terms of processes rather than the possession of vaguely specified forms of 'cultural capital'. The analysis also gives some substance to 'pedagogic habitus' and demonstrates the relationship between this, social class and differences in forms of pedagogic practice.

The final phase of the empirical programme, presented in Chapter 11, focuses on those sections of the interviews where parents discuss the IMPACT activities they have carried out with their children. The analysis develops further the semantic network introduced in Chapter 6. The use of the network to code the interview extracts establishes clear differences in the semantic orientation of working class and middle class parents. This consolidates the analyses presented in previous chapters. It enables a direct link to be made between social class and the form of statements made in accounts of the realisation of school mathematics tasks within the home. As in the analysis of the diaries, a distinction is made between generalisers and localisers on the basis of the semantic repertoires (and thus semantic orientations) of the interviewees. The majority of middle class parents are classified as generalisers, as they make some task independent statements. The majority of working class parents are, in contrast, classified as localisers. The coding of the statements made also enables within class variation to be explored and for these differences to be related directly to differences in pedagogic biography. The analysis demonstrates the privileged nature of the discourse of the pedagogy oriented middle class parents with respect to the discourse of teachers. It underlines the potentially disruptive effect of an orientation to mathematical discourse for discourse oriented middle class parents. It shows that that, whilst variations in the pedagogic biographies of the working class parents do make a difference, the pedagogy oriented working class parents do not match the middle class pedagogy oriented parents in the production of context independent statements. It demonstrates, at the fundamental level of semantic selection, the extent of the localisation of the accounts given by the locale oriented working class parents. These social class and pedagogic biography related

differences in the orientations of parents contrast dramatically with the homogenised images of parents presented in the booklets. The development of the network in the context of the interview further refines the development of the language by which we can move between what people say and can say in this setting and the description of a range of different orientations to, in this case, school mathematics and its realisation in the home.

### 12.3.2 CONTRIBUTION OF THE STUDY

As well as making a direct contribution to sociological knowledge regarding relations between parents/home and teachers/school, in general, and the social basis of parental participation in school mathematics, in particular, this thesis has made a contribution to the development of sociological theory and research methodology. In this section, I consider briefly the nature of these contributions.

#### *12.3.2.1 Knowledge about relations between parents/home and teachers/school and the processes of parental involvement in school mathematics*

Research carried out within the IMPACT project has played down the relationship between the social class characteristics of a school's intake and the form of implementation of IMPACT (see Chapter 2). It has also paid little attention to the relationship between the social class position of individual parents and the manner in which they engage with school mathematics tasks in the home and the form of 'dialogue' established between parents and teachers. The research presented in this thesis has demonstrated that there are clear social class differences in the form and content of the comments made by parents in the IMPACT diaries (see Chapter 6). It has also demonstrated that, from their reading of IMPACT tasks and accounts of how they realise school mathematics tasks, there are clear differences in the discursive resources that parents from different social class backgrounds bring to the conduct of IMPACT and in their mode of engagement with IMPACT tasks (see Chapters 10 and 11).

In addition to variation *between* social classes, the research has also demonstrated that there is variation *within* social classes (see Chapter 10). This contrasts with much of the recent sociological research on relations between parents/homes and teachers/schools (see Chapter 3) in which variation in orientation and practice within social classes in not systematically addressed. This also contrasts with the homogenising of parents evident in IMPACT booklets for parents produced by schools (see Chapter 5). The manner in which these booklets both position parents as subordinate to teachers in the domain of school mathematics and present the home as a site to be appropriated as a site for the elaboration of the pedagogic action of the school is also demonstrated by the analysis of the booklets.

The analysis of the comments made by parents in the IMPACT diaries (see Chapter 6) goes significantly beyond existing analyses of this kind of data (for instance, Woods & Merttens, 1994) and, again, demonstrates that there are social class differences in the manner in which parents position themselves with respect to the school in and through the comments made in the diaries.

The Midbury study has illuminated the processes by which differentiation on the basis of social class occurs in and through parental involvement in primary mathematics education. It has contributed to our understanding of these processes by relating the teachers' selection of tasks, ideal forms of realisation and evaluation of outcomes (see Chapter 8) to parents' pedagogic resources, their modes of realisation of school mathematics tasks and their semantic orientation (see Chapters 9, 10 and 11). Through this the differences between teachers' notions of how tasks should be realised in the home and parents' accounts of their practices are highlighted. The study demonstrates that there are social class based differences in parents' access to the principles of realisation and evaluation of tasks and that there are also within class variations which relate to the pedagogic biographies of parents. These outcomes set the research apart from other work in the field of parental participation in schooling.

#### *12.3.2.2 Implications for parental participation initiatives*

Although it has not been the intention to contribute explicitly to the development of the practice of parental involvement in primary school mathematics, there are clearly a number of implications for practice that could be drawn from this work.

The analysis of booklets for parents (Chapter 5) draws attention to the need to address the relationship between the form and content of material for parents and the social characteristics of the school's catchment community. This could inform the development of an approach to the production of material for parents which takes into account more than simplistic notions of clarity of communication with a socially homogenised readership. In particular, it draws attention to the need to attend to the nature of the relationship of the school to its catchment community from the perspectives of the parents as well as the school.

This is reinforced by the results of the analysis of the IMPACT diaries (Chapter 6). The diversity of forms of engagement evident in the analysis of the diaries might alert teachers to the need to develop ways of addressing the socially heterogeneous nature of the parents with whom they are attempting to develop a dialogue. It is clearly important to appreciate the nature of each parent's engagement with and approach to IMPACT, in particular, and schooling, in general, in order to develop an effective dialogue and to maximise the possibility of socially equitable outcomes. An awareness of the strategies employed by parents in their interactions with school and the social class based differences in the form and content of the messages sent to the school by parents is clearly helpful in this respect.

The Midbury study provides an even clearer picture of differences between and within social classes (Chapters 7 to 11). Even within a small sample, there is substantial variation in how, for instance, parents read, realise and evaluate tasks. In particular, it is striking to note that only one of the parents in the sample appears to engage with the tasks in the collaborative manner advocated by teachers and in the IMPACT literature. As it is

currently realised, IMPACT appears to act to the advantage of particular groups of parents. The research demonstrates that to move beyond this, teachers need to be aware of, and act on, the differences in the discursive resources that parents bring to the realisation of school mathematics tasks within the home and of the differences in orientation to schooling. An awareness of the manner in which teachers select tasks and evaluate outcomes, and how they interpret what the parents say and do, would also be of advantage to parents and to parent groups in their engagement with initiatives such as IMPACT. This is not to suggest, however, that making minor changes to the form of interaction between parents and teachers is going to undermine the (re)production of social relations in and through schooling. If there is to be change though these kinds of initiatives, I would suggest that it is likely to be highly localised in nature and as a result of the context specific activities of parents and teachers. The contribution of this research, in this domain, is to illuminate the processes by which the social distribution of performance in school mathematics is (re)produced in and through contemporary practices of parental participation.

#### *12.3.2.3 Research methodology*

The use of semantic networks has enabled the establishment of a non-circular relationship between data and theory. The networks are informed, but not determined, by a particular model of pedagogy and understanding of the social structuring of pedagogic relations (see Chapter 1). From this initial theoretical orientation, a network was initially developed by working through the IMPACT diaries and drafting out categories for the coding of comments (see Chapter 6). These categories were arranged hierarchically in network form and descriptions developed to enable the reliable application of the network. The resulting network was adapted and applied to the analysis of the interviews (see Chapter 11). The interviews and the networks, whilst not theoretically derived, can be articulated with a more general theory of the social structuring of pedagogic relations. In themselves, the networks thus provide a means of translating data into theoretically

meaningful terms. They can thus be used, and through their use, developed further, to make distinctions between the form and focus of statements made by individuals which can provide the basis for the description of the semantic orientation of those individuals. The networks can clearly be applied, and developed, in contexts beyond those in which they were developed. The thesis thus makes a methodological contribution to the field both in terms of the application and development of a particular conception of the relationship between theory and research and in the production, in the context of parents' statements about the realisation of school mathematics tasks in the home, of a network which enables translation between the language of enactment and more general theory.

#### *12.3.2.4 Sociological theory*

One of the outcomes of the review of recent sociological research (Chapter 3) was to raise questions about the limitations on sociological explanation of the (re)production of social relations in and through schooling associated with the adoption by researchers of elements of Bourdieu's cultural reproduction theory. The form of explanation offered in this thesis has avoided the deployment of high level structuring concepts and has, instead, focused on the development of a conceptual language through the dialogue established between theory and data in the process of analysis (see Chapter 4). For example, rather than make reference to the 'habitus' of parents as embodying and, at the level of the individual, producing sets of dispositions and orientations, I have explored the notion of pedagogic biography in order to begin to elaborate what forms of experience give rise to particular orientations to official pedagogic practice and the production of particular forms of local pedagogic practice, and how these relate to the class positioning of the parent. Similarly, I have eschewed the use of the concept of 'capital' because to do so would underplay the extent to which, say, particular experiences or skills or understandings have different effects, or 'value', according to the class positioning of parents. Instead, I have explored differential access to discursive resources and how this relates to class position and pedagogic biography. The stress here

is on development of an understanding of the relationship between pedagogic practice in the school and the home and the processes of parental participation. In this way, I have attempted to pass beyond the criticisms I have made of other research in the field and develop an account that demonstrates how the structuring of pedagogic discourse and its associated practices come to relay external power relations and patterns of domination. Only by doing this can the explanatory potential of concepts such as 'pedagogic habitus' and 'pedagogic capital' be realised.

## 12.4 Directions for future research

The discussion of the limitations of this research in Section 12.2 above points to a number of possible directions for further sociological research within the field of parental participation in schooling. It would, for instance, be productive to draw together the three phases of the study and look at the relationship between the materials produced for parents by schools with different intake characteristics, the form of comments made in IMPACT diaries by these parents and the form of realisation of tasks by parents. This would enable a stronger relationship between these elements in the process of parental participation to be established. It would also enable more detailed exploration of the relationship between the practices of the school and the social characteristics of the catchment community (hinted at in this study by the analysis of the Kingsgate booklet in Chapter 5). Whilst researchers in the field of school effectiveness and improvement make claims that parental participation in schooling is a key factor in achieving 'effective schools' (see, for instance, Crispeels, 1996), little attention has been given to the relationship between these practices and the intake characteristics of a school (a general criticism of school effectiveness studies made, for instance, by Angus, 1993).

The research reported in this thesis has begun to provide a language for describing the mode of engagement of parents in pedagogic tasks within the home, but has only

addressed the accounts given by parents. It would clearly be possible to develop this work further to analyse the form of interaction that takes place between parents and children when they do school mathematics, and other, tasks together at home. In the early stages of the IMPACT project, video tapes were made of parents and children working on IMPACT tasks together at home, but these were not analysed (though there is a short discussion based on a segment from one of these tapes in Vass & Merttens, 1987). The form of analysis developed here could be applied to the analysis of data such as this. It could also be extended to address the accounts given by children.

The analysis presented here has, as observed in Section 12.2.2, focused on social class but has not considered how ethnicity relates to variations within and between social classes with respect to relations with the school, access to discursive resources, forms of local pedagogic practice and modes of engagement with school like tasks. A larger scale study could build on the achievements of the Midbury study to do this. Such a study could also address other variables such as the achievement level of the children. In such a study, it would also be important to explore the gendered nature of the domestic division of labour with respect to relations with the school.

The limited scale of the Midbury study also draws attention to the potential for a more detailed analysis of the accounts given by parents. As noted in Section 12.2.5 above, the networks could not be developed to make finer distinctions within the accounts given by parents because of the limited amount of appropriate text available for analysis. The distinctions made within and between social class groups with respect to semantic selection are thus fairly crude. More extensive discussion with parents, particularly with regard to their analyses of school task, would enable a more subtle and delicate analysis to be developed.

The analysis presented here has focused exclusively on school mathematics. Parental involvement is, however, well developed in the area of literacy and is increasingly an element of the teaching and learning of other areas of the curriculum. There is clearly

potential for an analysis which looks at the relationship between social class, pedagogic biography and modes of engagement with respect to areas of the school curriculum other than mathematics. This would enable us to address more precisely the manner in which access to specialised discourse operates in the (re)production of social relations.

The form of analysis developed in this study clearly has applications beyond the field of parental participation in schooling. It has, for instance, addressed the question of professional/lay relations, a concern that can be extended beyond relations between parents and teachers. The manner in which the research has addressed social class differences in the reading and realisation of school mathematics tasks also raises questions about recent shifts away from schooling to other sites for pedagogic practice and the elaboration of pedagogic relations. Emancipatory claims are frequently made, for instance, about the pedagogic potential of the internet. The types of claims made in many ways mirror those made about the establishment of parental participation in formal education and more open dialogue between parents and teachers. The claim is made, for instance, that open access to information , and to interaction with a diversity of other people irrespective of location, made available by the internet will challenge the gate-keeping authority of formal educational institutions and lead to more equal access to privileged knowledge/conduct/practice (see, for instance, Spender, 1995). As is the case with the rhetoric of the IMPACT project, this argument neglects the very question of the social structuring of access to the principles of recognition, realisation and evaluation of this knowledge/conduct/practice, addressed in this thesis.

Furthermore, the increasing emphasis placed by state agencies on the public accountability of parents, the home as a site for the elaboration of official pedagogic practice and the family as a potential source of civil pathology (see, for instance, Home Office, 1998), indicates that it is important to extend studies such as this into domains of practice beyond formal education.

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# Appendix 1:Coding network for diary comments

## A1.1 Introduction

The descriptions of the network given in Chapter 6 provide an overview of the coding scheme used in the analysis of IMPACT diaries but do not give sufficient detail to get a complete feel for the distinctions that are being made. For this it is necessary to look at each element in the coding network (see Figure 6.4 in Chapter 6 for the complete network) with illustrative examples of comments from the diaries. The initial levels of the network make a distinction between comments that focus on the acquirer and those that focus on the task. The acquirer focused comments are further divided into those that focus on competence and those that focus on disposition. The task focused comments are divided into those that focus on the evaluation of the task and those that focus on the realisation of the task. The initial levels of the network can thus be represented as follows:

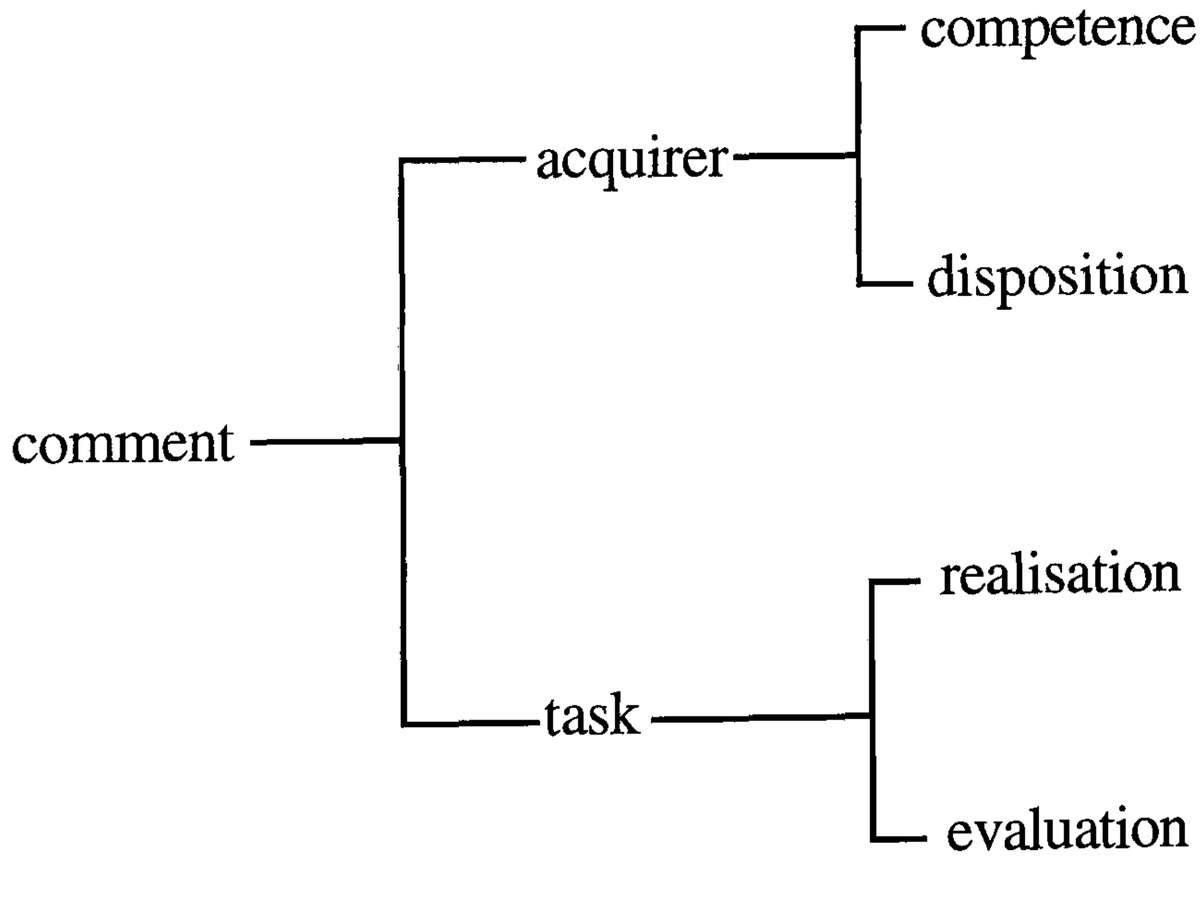


*Figure A1.1: The initial levels of the diary coding network*

In the sections that follow, I will describe each of the sub-networks and give examples of comments from the diaries to illustrate the distinctions that are being made. In the final section, some examples are given of *contingent* comments are given.

## A1.2 Acquirer focused comments

### A1.2.1 COMPETENCE

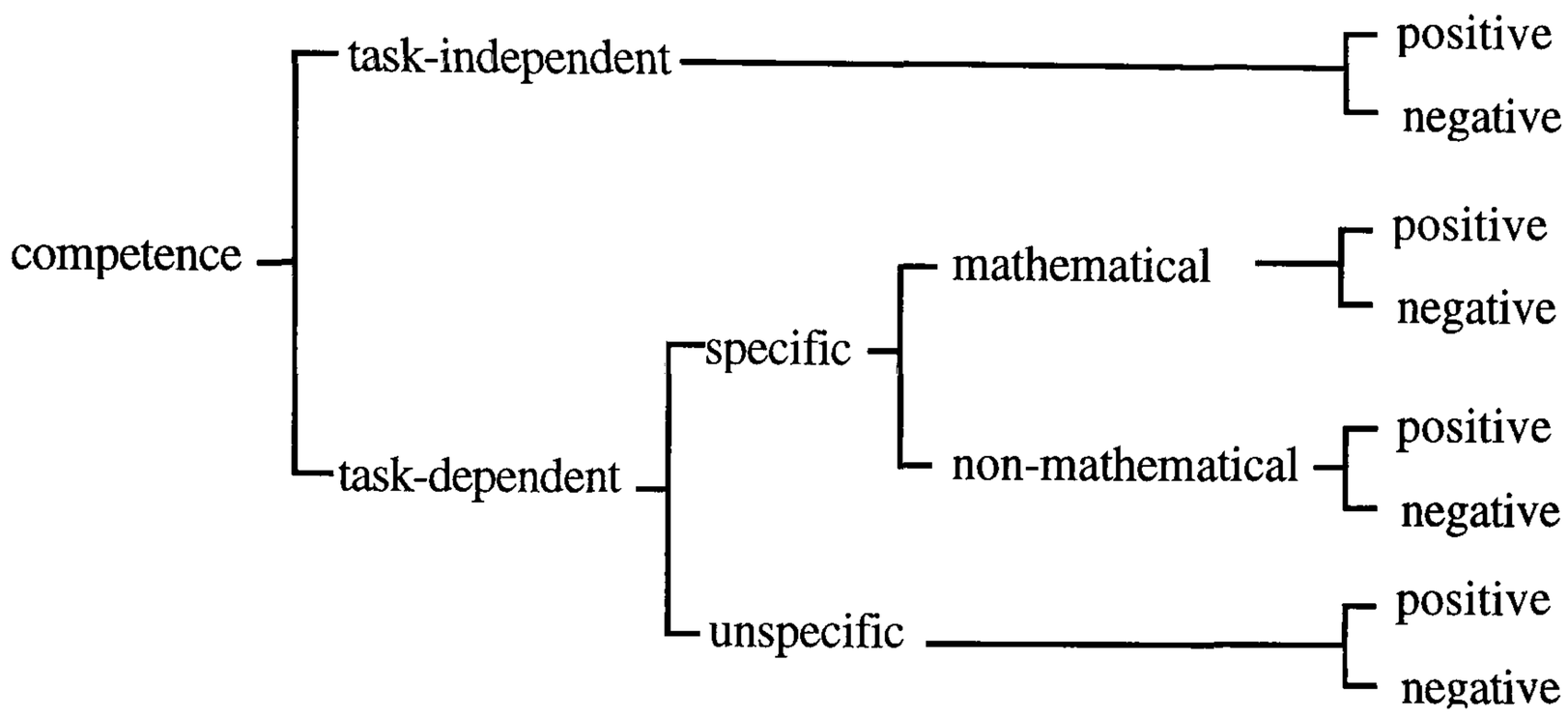


*Figure A1.2: Competence sub-network*

The completed diaries contain a wide range of statements made about the child (or the parent and child together) that relay information to the teacher about the child's mathematical competence. These statements include those that make direct reference to the speed with which the child carried out the activity, the amount of help they received, whether they were 'good' or 'bad' at the activity, whether the child found the task 'hard' or 'easy', how much they learnt from doing the activity or their level of understanding of the activity. *Task dependent unspecific* statements achieve this in a manner that does not make reference to any particular aspect of the activity nor does it

make explicit reference to school mathematics. The following comments would fall into this category:

- Very good and fast worker
- Shane did this activity completely on his own without any help
- he understood what it was all about
- I think he found this easy
- I think he gained a lot from this activity

Each of these comments address the engagement of the child in the task but does so in a way that presumes a high degree of transparency to the task. The operationalisation of the task is not problematised in any way nor is either the task or the child's performance broken down into components. Hence these comments are categorised as *unspecific*. All the examples given above make positive statements about the competence of the child. Some examples of comments that make negative statements are given below:

- really only learnt a little
- Too hard for Shell
- This was a bit too tricky for Joanne and she therefore needed a lot of help
- I expected Meena to do it better

*Specific* comments make similar kinds of statements but do so by making particular reference to some aspect of the task or the child's performance. Some positive and negative examples of *non-mathematical specific comments* are given below:

- Defining colours was easy *(positive)*
- His lego pirate ship gave him the idea and he did all the cutting and modelling himself *(positive)*
- She managed the coins very well *(positive)*
- He however did have some hitch in keeping track with his number of paces from school to home *(negative)*
- has not yet developed any strategies for winning *(negative)*
- Penny didn't have many ideas for making it *(negative)*
- got stuck on the biscuits *(negative)*

- I helped Rochelle with the chart. She was unsure how to construct it *(negative)*
- had a little trouble with the 'Bird's Eye View' of sofa, chair etc. *(negative)*

These comments relay information about the quality of engagement of the child in a particular aspect of the task. The parent is here selecting out a specific element of the activity that is of particular note. *Mathematical* comments take this a step further and make specific reference to school mathematics. The following selection gives positive and negative examples of these:

- Helen felt she learnt a lot about numbers and addition *(positive)*
- Emma realised that less large objects would be needed to cover the area *(positive)*
- Ruth was very good at guessing and counting *(positive)*
- Learnt that many things can be made up to make a whole total required *(positive)*
- Lizzy's main difficulty is subtraction, but she was able to overcome this problem using smaller denomination coins *(positive)*
- I had to do the division for her *(negative)*
- Didn't seem to register that the tessellated tiles fitted the same no. of times as the other ones—or couldn't see why—I think *(negative)*
- Problems with the counting and measuring *(negative)*
- Charlene had difficulty in counting over 100 *(negative)*
- He had little concept of what 43 lego bricks looked like *(negative)*

In these comments primary school mathematics is employed as a resource for making a statement about the quality of engagement of the child in the task. These statements are still very much tied to the specific task that the parent and child are engaged with. The information relayed is, however, much more clearly processed by the parent and is expressed mathematical terms that make the comments significantly closer to the type of evaluation of performance of a child that might be made by a teacher.

The final category of acquirer focused comments that concern competence contains comments that move completely away from the specific context of the activity and relay statements about the generalised competence of the child (*task independent* comments). For example:

- already knows 1-6 and can write the figures *(positive)*
- She understands circumference and diameter *(positive)*
- Simone seems to be quite good at estimating *(positive)*
- he is aware of conservation of number *(positive)*
- Charlene finds it difficult to add with money *(negative)*
- Jenny is still not sure of 10s and units *(negative).*
- Diana also doesn't yet know 30, 40, 50 etc *(negative)*
- Penny still has trouble with £s & pence *(negative)*

These comments relay a far more highly processed judgement to the teacher. Whereas the other forms of comment discussed in this section present the teacher with observations drawn from the activity that the parent and child have experienced at home, generalised comments present the teacher with an *assessment* of the competence of the child.

### A1.2.2 DISPOSITION

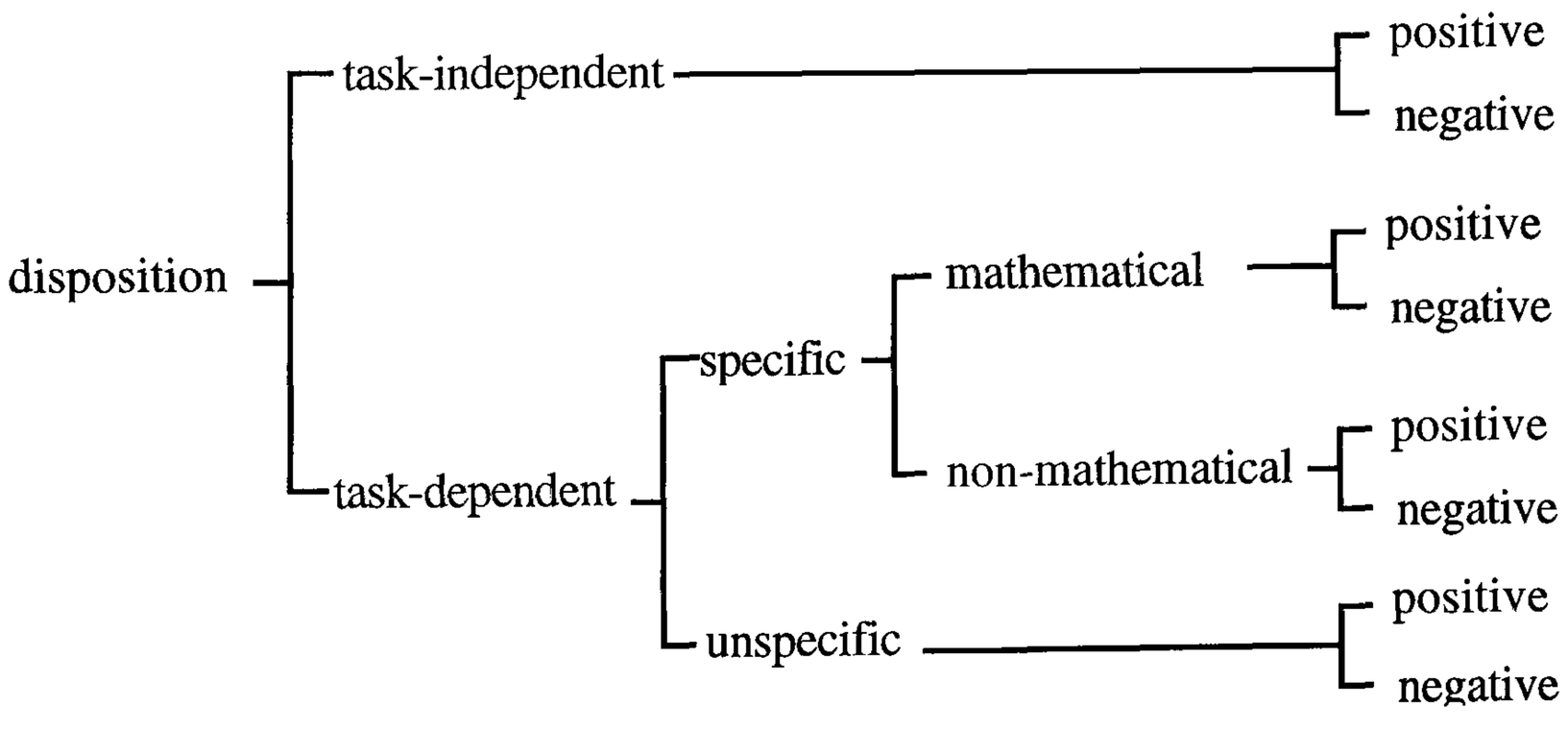


*Figure A1.3: Disposition sub-network*

These comments relay information to the teacher about the personal qualities of the children and their orientation to school mathematics. These comments can be categorised in a similar way to the comments that focus on the competence of the child. *Task dependent unspecific* comments report on the child's (and in some cases parent's) reaction to the activity without specific reference to any particular element of the activity. The comments might refer to the enjoyment of the activity, the motivation of the child, the level of interest in the task or the particular personal qualities of the child (e.g. whether they are patient). As with the competence focused comments, these comments can also be categorised as positive or negative depending on whether a positive or negative image of the child's orientation or disposition is projected. The following are examples of task dependent unspecific comments.

- Joe had great fun doing this exercise! *(positive)*
- He loved doing this work *(positive)*
- She really enjoyed doing the work *(positive)*
- she tried her best *(positive)*
- Donna enjoyed this very much *(positive)*
- it just didn't seem to interest him *(negative)*
- he said it was boring *(negative)*
- I found that Fiona is not listening very well *(negative)*
- Fiona lost interest too quickly *(negative)*

*Task dependent specific* comments make reference to a particular aspect of the activity.

- She enjoyed drawing the map *(positive)*
- she enjoyed colouring in the picture best *(positive)*
- Sally had fun doing this game *(positive)*
- Rochelle made a wheelbarrow. She enjoyed this *(positive)*
- Fred was keen to fill it in *(positive)*
- Donna loved this game especially because she could used my pasta shells *(positive)*
- Once Tim got going on this exercise he enjoyed doing it *(positive)*
- Great fun trying to guess correctly *(positive)*

- Fiona was interested and we had a great time picking colours *(positive)*
- enjoyed the practical side of activity *(positive)*
- She wanted to beat mummy but didn't mind too much that she came second! *(positive)*
- decided it was boring *(negative)*
- Didn't want to guess how many things we'd need to use *(negative)*

*Task dependent mathematical* comments make specific reference to an element or elements of school mathematics. For example:

- We had lots of fun adding up *(positive)*
- Cynthia enjoyed cutting out the squares and arranging them to add to fifteen *(positive)*

The comments in the final category, *task independent* comments, move away from the particular context of the activity to make statements about the underlying disposition of the child:

- Paul finds it difficult to maintain concentration *(positive)*
- Simone enjoys all these measuring & estimating tasks *(positive)*

## A1.3 Task focused comments

### A1.3.1 Evaluation

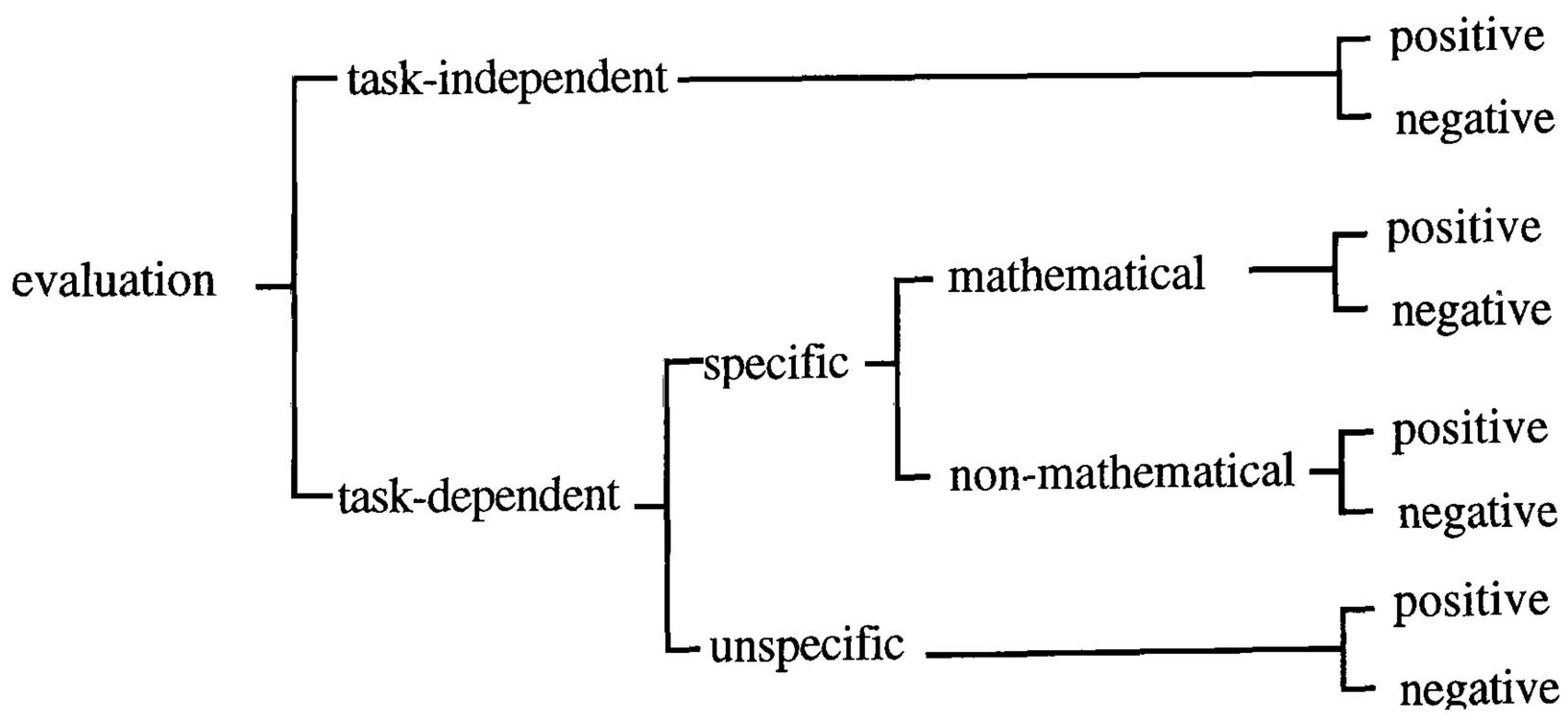


*Figure A1.4: Evaluation sub-network*

These comments relay information to the teacher about the parent's evaluation of the task itself. Evaluations can be positive or negative. Like the acquirer focused comments they also be categorised as task dependent unspecific, mathematical or non-mathematical comments, or task independent comments. Some examples are given below:

- The game was good fun *(unspecific positive)*
- Good fun! *(unspecific positive)*
- Good fun and easy to play *(unspecific positive)*
- It was hard to visualise the point in this game *(unspecific negative)*
- good to involve other people *(specific non-mathematical positive)*
- Living in the town and not knowing much about geological formations he was unaware what type of natural structures made up an island *(specific non-mathematical negative)*
- scoring and having a winner did rather spoil the fun *(specific non-mathematical negative)*
- This was a good exercise for sorting THTU.*(specific mathematical positive)*
- A good way of learning how to count *(specific mathematical positive)*
- Could have asked for more things to plot *(specific mathematical negative)*
- Too easy. A low amount of money i.e. 50p would be more of a test *(specific mathematical negative)*

### A1.3.2 REALISATION

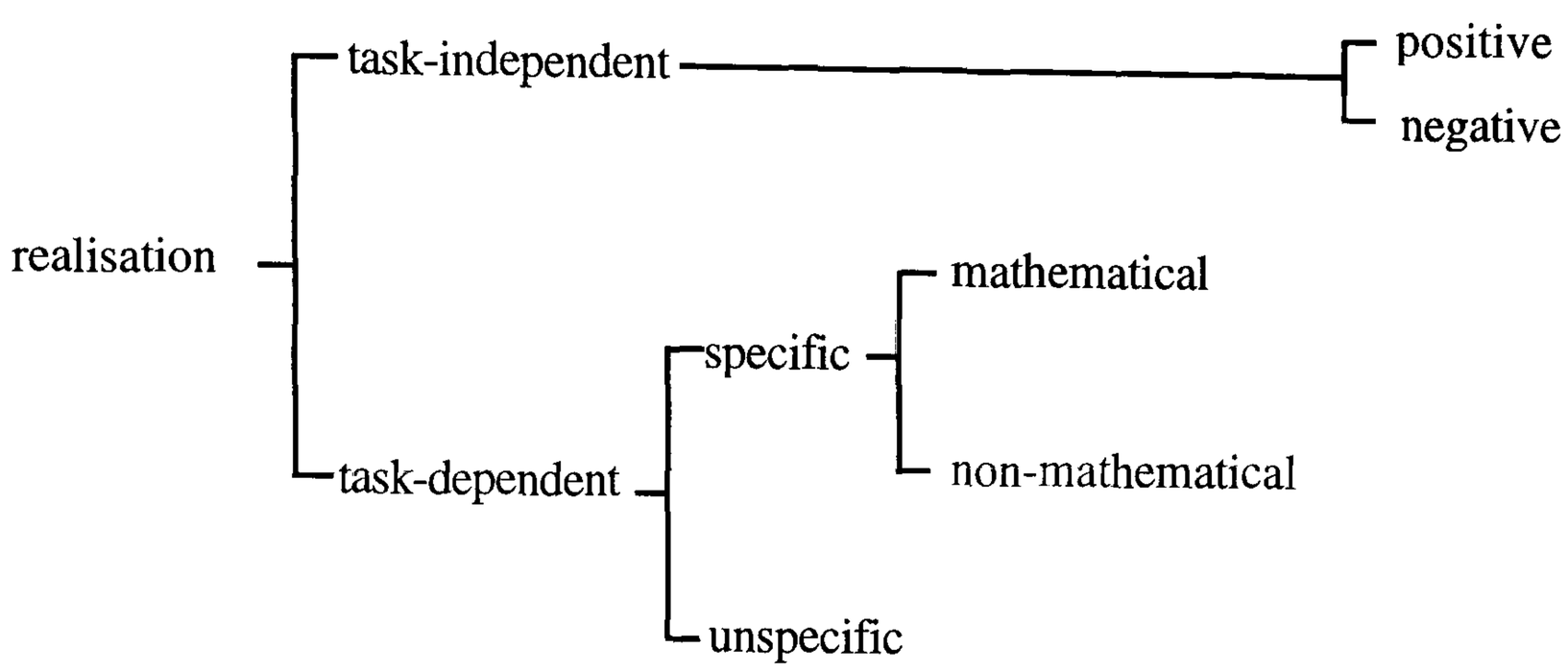


*Figure A.1.5: Realisation sub-network*

These comments relay information about the manner in which the parent carries out the task with the child, that is they give details of the process of doing the task from the parents point of view.

- we could not find anything deep to use for the well *(specific non-mathematical)*
- We found we ran out of 4/4 and 3/4 in the grid and had to exclude the card late into the quilt *(specific non-mathematical)*
- The buttons we counted in 10s!! *(specific mathematical)*
- To follow the instructions and make 3 figure numbers we took the 10s out as well *(specific mathematical)*

## A1.4 Contingent comments

These comments are concerned neither with the acquirer nor with the task. They appear to relay additional information about the parent, the child or the home context. For example:

- it's her favourite hobby!!
- I was quite impressed—hope it's the kind of thing you had in mind

- she realised she hadn't put them all in value order as it was very late after coming home from her holiday
- she was in a bad mood all day Sunday!
- She had just found a new dog and couldn't concentrate
- Sorry it's late but we had a wedding at the weekend
- I am afraid I did most of this activity as we were very short of time this weekend
- I have told him that you will still think that his idea is a good one
- Guy has done one for Mrs Smith.
- Joanna spilt a cup of tea over Ben's work and we all finished up with blue hands/paw
- We saw this on Penny's favourite programme—Bitsa
- at the time he didn't but then he wasn't feeling very well!

# Appendix 2:Results of diary coding

The tables given below provide a summary of the coding of the Eastwood, Beech and Chambers diaries. The columns of each main table refer to the focus of the comments (divided where appropriate into positive and negative comments). The rows refer to the form of the comments. Subtotals for a selection of categories of comments are given below each main table

**East Wood**

| | Acquirer | | | | Task | | | |
|---|---|---|---|---|---|---|---|---|
| | Competence | | Disposition | | Process | Evaluation | | Totals |
| | pos | neg | pos | neg | | pos | neg | |
| Unspecific | 127 | 13 | 148 | 7 | 13 | 33 | 1 | 341 |
| Specific | 65 | 12 | 52 | 12 | 31 | 7 | 5 | 182 |
| Mathematical | 94 | 30 | 5 | 0 | 22 | 3 | 1 | 154 |
| Task ind. | 39 | 14 | 9 | 0 | 0 | 0 | 0 | 61 |
| Totals | 324 | 68 | 213 | 19 | 65 | 43 | 7 | 738 |

| | |
|---|---|
| Acquirer positive comments | 537 |
| Acquirer negative comments | 87 |

| | |
|---|---|
| Competence comments total | 392 |
| Disposition comments total | 232 |

| | |
|---|---|
| Evaluation comments total | 50 |
| Task comments total | 114 |

| | |
|---|---|
| Uncoded comments | 14 |
| Teacher comments | 147 |
| Child comments | 10 |
| Contingent comments | 56 |

*Table A2.1: Summary of the coding of East Wood diaries*

**Beech**

| | Acquirer | | | | Task | | | |
|---|---|---|---|---|---|---|---|---|
| | Competence | | Disposition | | Process | Evaluation | | |
| | pos | neg | pos | neg | | pos | neg | Totals |
| Unspecific | 21 | 17 | 34 | 4 | 3 | 12 | 3 | 94 |
| Specific | 7 | 1 | 34 | 2 | 9 | 1 | 2 | 56 |
| Mathematical | 20 | 5 | 0 | 0 | 6 | 4 | 1 | 36 |
| Task ind. | 4 | 1 | 0 | 1 | | 1 | 1 | 8 |
| Totals | 52 | 24 | 68 | 7 | 18 | 18 | 7 | 194 |

| | |
|---|---|
| Acquirer positive comments | 120 |
| Acquirer negative comments | 31 |

| | |
|---|---|
| Competence comments total | 76 |
| Disposition comments total | 75 |

| | |
|---|---|
| Evaluation comments total | 25 |
| Task comments total | 43 |

| | |
|---|---|
| Uncoded comments | 4 |
| Teacher comments | 68 |
| Child comments | 10 |
| Contingent comments | 0 |

*Table A2.2: Summary of the coding of Beech diaries*

**Chambers**

| | Acquirer | | | | Task | | | |
|---|---|---|---|---|---|---|---|---|
| | Competence | | Disposition | | Process | Evaluation | | |
| | pos | neg | pos | neg | | pos | neg | Totals |
| Unspecific | 35 | 14 | 45 | 12 | 1 | 54 | 18 | 179 |
| Specific | 6 | 4 | 17 | 1 | 8 | 9 | 13 | 58 |
| Mathematical | 8 | 4 | 5 | 0 | 3 | 10 | 5 | 35 |
| Task ind. | 0 | 3 | 0 | 0 | 0 | 2 | 1 | 6 |
| Totals | 49 | 25 | 67 | 13 | 12 | 75 | 37 | 278 |

| | |
|---|---|
| Acquirer positive comments | 116 |
| Acquirer negative comments | 38 |

| | |
|---|---|
| Competence comments total | 74 |
| Disposition comments total | 80 |

| | |
|---|---|
| Evaluation comments total | 112 |
| Task comments total | 124 |

| | |
|---|---|
| Uncoded comments | 1 |
| Teacher comments | 8 |
| Child comments | 55 |
| Contingent comments | 3 |

*Table A2.3: Summary of the coding of Chambers diaries*

# Appendix 3:Teacher interview schedule

***Introduction***

I am carrying out a study looking at the involvement of parents in primary school mathematics. As part of this I am talking to parents and teachers about the IMPACT work that they do. Although I've worked on some of this with Ruth Merttens, I'm not formally part of the IMPACT project. Ken Thompson suggested that I talk to you because of your involvement with IMPACT. Up until a few years ago I was a primary school teacher myself and so know how pressed for time you are—I want to try to complete the interview in less than an hour.

Everything that you say to me will be treated with total confidentiality. None of the teachers, parents, schools or even LEAs will be identified in the write up. I will not report back what you say directly to anyone, but I do hope to be able to make some general observations that will be useful to people doing IMPACT here and elsewhere.

I would like to tape record our conversation so that I don't have to frantically take notes during the discussion. No one apart from me will listen to the tapes. I hope that this is OK.

***1. Teacher participation***

1.1. You have a Year X class and I believe you are sending IMPACT tasks home on a regular basis.

1.2 How long have you been doing IMPACT?

***2. IMPACT tasks***

2.1 How many IMPACT activities have you sent home so far this term?

2.2 Do you send the same activity home for all the children or do you try to match the activities to the attainment and needs of the children? Why have you chosen to do this (either to differentiate or not differentiate)?

2.3 Could we take a look at the actual activities? If we take this particular activity could you give me some indication of the range of responses that you had from parents?

2.4 Of the work produced by the children and parents together which do you consider to be the best? Why?

2.5 Which of the work did you find disappointing? Why?

2.6 From your point of view was this a successful or unsuccessful activity? In what sense?

2.7 Can you tell me what you feel the purpose of the activity is?

2.8 Did the parents 'get it'? Does this matter?

2.9 How do you think the parents should have carried out the activity for the children to get the most benefit from it?

2.10 Is there an activity here that you think has been more/less successful?

2.11 Could you give me some indication of the range of responses that you received from parents?

2.12 Of the work produced by the children and parents together which do you consider to be the best? Why?

2.13 Which of the work did you find disappointing? Why?

2.14 From your point of view was this a successful or unsuccessful activity? In what sense?

2.15 Can you tell me what you feel the purpose of the activity is?

2.16 Did the parents 'get it'? Does this matter?

2.17 How do you think the children and parents should have carried out the activity to get the most benefit from it?

*Repeat questions 2.10 to 2.17 for a maximum of two additional activities as judged appropriate.*

2.18 Can you put the activities in order according to how successful you felt they were as IMPACT activities?

2.19 What makes a good IMPACT activity?

2.20 Are the activities you select for IMPACT work equally interesting to boys and girls?

2.21 Do you design your own activities or do you use activities from the IMPACT packs or books?

2.22 With the knowledge you have of the parents and of the children's needs what kinds of activities do you think work best?

2.23 Do you use the IMPACT diary or any other form of feedback from parents and children? *Look at the diaries.*

2.24 What are the effects on your practice of the comments that parents and children make?

2.25 Do you produce a booklet for parents? *Look at booklet.*

***3. Parent participation***

3.1 Do all the parents take part? What proportion of the class do regularly do the activities? Who are the particular people who do not take part? Refer to class list.

3.2 Can you explain why you think some parents don't take part?

3.3 Can you tell me something of the background of the families who don't take part?

3.4 What do you do for those children who do not get to do their IMPACT activities at home?

3.5 Who does the IMPACT activities at home with the children in your class—mother, father or other (who?)?

3.6 Which parents do you feel are most enthusiastic about doing IMPACT activities? Discuss each one.

3.7 Which parents do you feel are least enthusiastic about doing IMPACT activities? Discuss each one.

***4. Children***

4.1 Can you identify the children who you think are generally doing very well at school? Which children are not doing well?

4.2 Can you identify the children who you think are doing well in mathematics? Which children are not doing well in maths?

***5. IMPACT***

5.1 What is the purpose of IMPACT (in general, at this school, at another named school)?

5.2 What are the benefits to you from doing IMPACT activities?

5.3 What do parents gain from being involved in doing IMPACT activities with their children?

5.4 What do children gain from being involved in doing IMPACT activities with their parents?

***6. Selecting parents***

*Look through the names in the most/least enthusiastic parents categories. Talk briefly about each parent. Select four parents (two thought to be enthusiastic, two thought to be unenthusiastic). Select additional parents to substitute for those who prove impossible to contact or who decline to be interviewed.*

6.1 What do you think they will say when asked ... (sample questions from parent interview)?

***7. Closing activity***

7.1 When I talk to the parents I would like to give them and IMPACT activity from one of the packs to look at and talk about. This is the activity. What do you think of the activity? What do you think the purpose of the activity is in your opinion? How do you think they would do it?

7.2 How much do you feel it is reasonable for parents to be asked to do with their children?

7.3 Are you a parent yourself? How actively do you participate in the education of your children? Do you feel that what you are asked to do by the school is reasonable? Do you have sufficient time to be as actively involved as you would like?

# Appendix 4:Parent interview schedule

***Introduction***

I have been talking to parents in different parts of the country about their children's education. I work in London and so don't know Midbury schools very well. I do know that your child's school takes part in the IMPACT project (sends maths activities home for you to do with your children) and I would like to talk to you about this.

Everything that you say to me will be treated with total confidentiality. None of the teachers, parents, schools or even LEAs will be identified in the write up. I will not report back what you say directly to anyone, but I do hope to be able to make some general observations that will be useful to people doing IMPACT here and elsewhere.

I would like to tape record our conversation so that I don't have to frantically take notes during the discussion. No one apart from me will listen to the tapes. I hope that this is OK.

***1. IMPACT tasks***

*Present IMPACT tasks that have been sent home this term.*

1.1 Do you recall doing these activities?

*Select one discussed with teacher.*

1.2 How did you do this activity when your child brought it home?

1.3 What do you think the activity is designed to teach? How do you think it achieves this? How do you think doing this activity will help your child at school?

*Repeat questions 1.2 and 1.3 for other activities discussed with teacher.*

1.5 Out of these activities which did you feel was the most successful? Why?

1.6 Which did you feel was the least successful? Why?

*Re-present criteria given.*

1.7 Are there some maths activities which your child finds difficult? What do you when s/he has problems with something?

1.8 I have selected one activity from an IMPACT pack for you to look at. I'm interested in how you would do this with your child. How would you judge whether the activity has been successful or not? What do you think the activity has been designed to teach?

***2. School mathematics***

2.1 Do you feel confident about your own mathematics when you work with your child? At what age do you think this might change?

2.2 Do you do any other things at home with your children that helps them with their maths at school? What kinds of things?

2.3 Are there things that you could do at home (or actually do at the moment) that would be more effective than doing IMPACT activities?

2.4 How were you taught maths at school? How does this compare with the way your child is taught maths? Are you happy with the maths that your child does at school?

***3. IMPACT***

3.1 Who usually does the activities with your daughter/son? Who else (details)?

3.2 Do you discuss the work you do with your partner (if appropriate) or with anyone else?

3.3 Does your daughter/son ever do the activities by themselves?

3.4 Where about in the house/flat do you do the activities? Do you set aside a particular time?

3.5 Do you ever have difficulty finding the materials you need for the activities?

3.6 Do you ever find it difficult to find the time to do the activities?

3.7 Do you find it easy to get your child to do the activities?

3.8 I am interested in the opinions of both people who enthusiastic about IMPACT and those who are less keen. Where would you place yourself?

3.9 What is it that makes you feel like this about IMPACT?

3.10 What do you think could be done to improve IMPACT?

3.11 What do you feel the benefits of IMPACT are (i) to yourself; (ii) to your child; (iii) to the teacher?

3.12 Do you fill in the comment box in the diary? What kind of comments do you make? How do you know what to put? What do you think happens as a result of the comments you make?

***4. Relations with school***

4.1 What is your level of involvement with the school?

4.2 Would you like to be more involved in your child's education? How?

4.3 If you had a problem with your child's work at school what would you do? Do you feel the teacher is easy to approach?

4.3 Is there anything about your child's education that you would like to know but aren't being told by the school?

***5. General***

*The following information to be gathered either by direct questioning as below or incidentally during other sections of the interview.*

5.1 Do you work? What do you do? What kind of work does your husband / wife do?

5.2 How far did you get with maths at school? Have you used mathematics in any of the work you have done? Additional information on schooling and qualifications.

5.3 Looking into the future what kind of qualifications would you like to see your child achieve? What kind of occupation would you wish them to take up? What do you feel the chances of this happening are?

# Appendix 5:Transcription Notation

An adaptation of the simplified notation given by Silverman (1993, p. 118) has been used in transcribing the interviews. Transcription symbols used:

[ ] Square brackets indicate questions or statements made by the interviewer.

{ Left brackets indicate the point at which a current speaker's talk is overlapped by another's talk.

= Equal signs, one at the end of one utterance and one at the beginning of the next, indicate no gap between the two utterances.

(2.4) Numbers in parenthesis indicate the elapsed time in silence in seconds.

*italics* use of italics indicates some form of stress.

( ) Empty parentheses indicate the transcriber's inability to hear what was said.

(word) Words in parentheses indicate a possible but uncertain hearing.

(( )) Double parentheses contain the author's descriptions or additional information rather than transcriptions.

. , ? Indicate speaker's intonation

Codes for the identification of tasks:

School initials plus key stage / reference number e.g. SB2/1

Reference to sources of tasks:

Blackwell (from one of the topic books published by Blackwell 1991);
Scholastic (from the series published by Scholastic 1993/4);
School (activities designed and produced by the school);
Blank (activity taken from one of the IMPACT activity packs);
Other (taken from another published source).

# Appendix 6:Results of task content coding

| Household | Class/ orientation | Money | Counting | Calculation | Measurement | Shape | General area score | Specialisation score |
|---|---|---|---|---|---|---|---|---|
| Barton | MC/DO | 1* | 1 | 1 | 1* | | 4 | 2 |
| Chapman | MC/DO | | | | | 1* | 1 | 1 |
| Easthope | MC/DO | 1 | | 1* | 1* | | 3 | 2 |
| Khan | MC/DO | 1 | | 1* | 1* | | 3 | 2 |
| Powell | MC/DO | 1* | | | | | 1 | 1 |
| Winters | MC/DO | | 1 | | 1* | 1* | 3 | 2 |
| Burbridge | MC/NDO | | | | 1* | | 1 | 1 |
| Parry | MC/NDO | 1* | | | 1* | | 2 | 2 |
| Greenaway | MC/NDO | 1* | 1 | | 1* | | 3 | 2 |
| Howells | MC/NDO | 1* | | | 1 | | 2 | 1 |
| Hudson | MC/NDO | 1 | | | 1* | | 2 | 1 |
| Olowe | MC/NDO | | | | 1* | | 1 | 1 |
| Kirkwood | MC/NDO | | | | 1* | | 1 | 1 |
| Murray | MC/NDO | | | | 1* | | 1 | 1 |
| Collins | WC/PO | 1 | 1 | | | | 2 | 0 |
| Drake | WC/PO | | | | 1 | | 1 | 0 |
| Geary | WC/PO | | | | 1 | | 1 | 0 |
| Gibson | WC/PO | | | | | | 0 | 0 |
| Patrick | WC/PO | | | | 1* | | 1 | 1 |
| Peters | WC/PO | | | | 1 | | 1 | 0 |
| Rawlings | WC/PO | 1* | | | 1* | | 2 | 2 |
| Thomas | WC/PO | | | | 1* | | 1 | 1 |
| Baker | WC/NPO | 1 | | | | | 1 | 0 |
| Bremner | WC/NPO | | | | | | 0 | 0 |
| House | WC/NPO | | | | | | 0 | 0 |
| Paice | WC/NPO | 1 | | | | | 1 | 0 |
| Stuart | WC/NPO | | | 1* | | | 1 | 1 |
| Woods | WC/NPO | | | | | | 0 | 0 |

*Table A6.1: Results of task content coding*

# Appendix 7:Results of parent interview coding

## A7.1 The format of the tables

The tables given below provide a summary of the results of coding of the interviews using the networks described in Chapter 10. Six tables are given. The first table (Table 7.1) provides a summary of the coding of the interviews with middle class parents. To enable comparisons to be made between sub-groups, tables are also given for the middle class discourse oriented group and the middle class pedagogy oriented group (Table 7.2 and Table 7.3). Similarly, a table is given for the working class parents as a whole (Table 7.4) and for each of the pedagogy and locale oriented working class group (Table 7.5 and Table 7.6).

The columns of each table refer to the focus of each comment (representing the first two levels of the network). The rows refer to the form of the comment (representing the subsequent levels of the network). Each cell of the table thus represents the number of comments that have a particular focus and form. Thus, looking at Table 7.1, we can see from form the top left-hand cell that there were seven comments made by middle class parents that were classified as focusing on acquirer competence and taking the form of a task independent mathematical comment. In each cell, the numbers in brackets give the breakdown of the number of comments into positive and negative comments. Thus, we can see from Table 7.1 that of the 79 task realisation unspecific comments made by middle class parents, 59 were positive and 18 were negative.

| *Middle class parents (whole group)* | | Focus | | | | |
|---|---|---|---|---|---|---|
| | | Acquirer | | Task | | |
| | | Competence | Disposition | Evaluation | Realisation | *Totals* |
| Task independent | Mathematical | 7 (7+) | 3 (3+) | 5 (1+/4-) | 2 (2+) | 17 (13+/4-) |
| | Non-mathematical | 1 (1+) | 12 (8+/4-) | 11 (5+/6-) | 24 (15+/9-) | 48 (29+/19-) |
| Task dependent | Specific (mathematical) | 22 (14+/8-) | 1 (1-) | 13 (5+/8-) | 49 (42+/7-) | 85 (61+/24-) |
| | Specific (non-mathematical) | 6 (5+/1-) | 8 (5+/3-) | 14 (2+/12-) | 40 (34+/6-) | 68 (46+/22-) |
| | Unspecific | 10 (5+/5-) | 12 (7+/5-) | 29 (18+/11-) | 77 (59+/18-) | 128 (89+/39-) |
| | *Totals* | 46 (32+/14-) | 36 (23+/13-) | 72 (31+/41-) | 192 (152+/40-) | 346 (238+/108-) |

*Table A7.1: Coding summary for middle parent responses (whole group)*

| *Discourse oriented middle class parents* | | Focus | | | | |
|---|---|---|---|---|---|---|
| | | Acquirer | | Task | | |
| | | Competence | Disposition | Evaluation | Realisation | *Totals* |
| Task independent | Mathematical | 2 (2+) | 0 | 4 (1+/3-) | 2 (2+) | 8 (5+/3-) |
| | Non-mathematical | 1 (1+) | 7 (3+/4-) | 3 (3-) | 7 (3+/4-) | 18 (7+/11-) |
| Task dependent | Specific (mathematical) | 10 (7+/3-) | 1 (1-) | 5 (3+/2-) | 29 (27+/2-) | 45 (37+/8-) |
| | Specific (non-mathematical) | 0 | 3 (2+/1-) | 8 (2+/6-) | 12 (8+/4-) | 23 (12+/11-) |
| | Unspecific | 4 (1+/3-) | 7 (3+/4-) | 11 (8+/3-) | 30 (23+/7-) | 52 (35+/17-) |
| | *Totals* | 17 (11+/6-) | 18 (8+/10-) | 31 (14+/17-) | 80 (63+/17-) | 146 (74+/46-) |

*Table A7.2: Coding summary for middle class discourse oriented parent responses*

| *Pedagogy oriented middle class parents* | | Focus | | | | |
|---|---|---|---|---|---|---|
| | | Acquirer | | Task | | |
| | | Competence | Disposition | Evaluation | Realisation | *Totals* |
| Task independent | Mathematical | 5 (5+) | 3 (3+) | 1 (1-) | 0 | 9 (8+/1-) |
| | Non-mathematical | 0 | 5 (5+) | 8 (5+/3-) | 17 (12+/5-) | 30 (22+/8-) |
| Task dependent | Specific (mathematical) | 12 (7+/5-) | 0 | 8 (2+/6-) | 20 (15+/5-) | 40 (24+/16-) |
| | Specific (non-mathematical) | 6 (5+/1-) | 5 (3+/2-) | 6 (6-) | 28 (26+/2-) | 45 (34+/11-) |
| | Unspecific | 6 (4+/2-) | 5 (4+/1-) | 18 (10+/8-) | 47 (36+/11-) | 76 (54+/22-) |
| | *Totals* | 29 (21+/8-) | 18 (15+/3-) | 41 (17+/24-) | 112 (89+/23-) | 200 (142+/58-) |

*Table A7.3: Coding summary for middle class pedagogy oriented parent responses*

| *Working class parents (whole group)* | | Focus | | | | |
|---|---|---|---|---|---|---|
| | | Acquirer | | Task | | |
| | | Competence | Disposition | Evaluation | Realisation | *Totals* |
| Task independent | Mathematical | 0 | 0 | 0 | 0 | 0 |
| | Non-mathematical | 3 (2+/1-) | 10 (8+/2-) | 0 | 23 (22+/1-) | 36 (32+/4-) |
| Task dependent | Specific (mathematical) | 5 (4+/1-) | 0 | 11 (8+/3-) | 18 (17+/1-) | 34 (29+/5-) |
| | Specific (non-mathematical) | 4 (2+/2-) | 5 (5+) | 9 (4+/5-) | 23 (19+/4-) | 41 (30+/11-) |
| | Unspecific | 29 (19+/10-) | 17 (16+/1-) | 42 (27+/15-) | 139 (122+/17-) | 227 (184+/43-) |
| | *Totals* | 41 (27+/14-) | 32 (29+/3-) | 62 (39+/23-) | 203 (180+/23-) | 338 (275+/63-) |

*Table A7.4: Coding summary for working class parent responses (whole group)*

| *Pedagogy oriented working class parents* | | Focus | | | | |
|---|---|---|---|---|---|---|
| | | Acquirer | | Task | | |
| | | Competence | Disposition | Evaluation | Realisation | *Totals* |
| Task independent | Mathematical | 0 | 0 | 0 | 0 | 0 |
| | Non-mathematical | 3 (2+/1-) | 6 (4+/2-) | 0 | 17 (16+/1-) | 26 (22+/4-) |
| Task dependent | Specific (mathematical) | 3 (2+/1-) | 0 | 5 (5+) | 13 (12+/1-) | 21 (19+/2-) |
| | Specific (non-mathematical) | 2 (1+/1-) | 1 (1+) | 3 (3+) | 13 (13+) | 19 (18+/1-) |
| | Unspecific | 21 (11+/10-) | 9 (9+) | 31 (22+/9-) | 85 (72+/13-) | 146 (114+/32-) |
| | *Totals* | 29 (16+/13-) | 16 (14+/2-) | 39 (30+/9-) | 128 (113+/15-) | 212 (173+/39-) |

*Table A7.5: Coding summary for working class pedagogy oriented parent responses*

| *Locale oriented working class parents* | | Focus | | | | |
|---|---|---|---|---|---|---|
| | | Acquirer | | Task | | |
| | | Competence | Disposition | Evaluation | Realisation | *Totals* |
| Task independent | Mathematical | 0 | 0 | 0 | 0 | 0 |
| | Non-mathematical | 0 | 4 (4+) | 0 | 6 (6+) | 10 (10+) |
| Task dependent | Specific (mathematical) | 2 (2+) | 0 | 6 (3+/3-) | 5 (5+) | 13 (10+/3-) |
| | Specific (non-mathematical) | 2 (1+/1-) | 4 (4+) | 6 (1+/5-) | 10 (6+/4-) | 22 (12+/10-) |
| | Unspecific | 8 (8+) | 8 (7+/1-) | 11 (5+/6-) | 54 (50+/4-) | 81 (70+/11-) |
| | *Totals* | 12 (11+/1-) | 16 (15+/1-) | 23 (9+/14-) | 75 (67+/8-) | 126 (102+/24-) |

*Table A7.6: Coding summary for working class locale oriented parent responses*